R E P O R T

Grand Pier L.L.C.
401 North Michigan Avenue
Chicago, Illinois

DRAFT

Work Plan for Illinois Street Caisson Installation

Illinois Street Viaduct
Grand Pier Center
Chicago, Illinois

STS Project No. 24418-XK

March 6, 2000

STS

STS Consultants, Ltd.
Solutions through Science & Engineering

March 7, 2000

Mr. Michael Witte
Grand Pier L.L.C.
401 North Michigan Avenue
Chicago, Illinois 60611

RE: Work Plan for Illinois Street Viaduct Caissons, Grand Pier Center, Chicago, IL - STS Project No. 24418-XK

Dear Mr. Witte:

Attached please find our draft Work Plan for the above referenced project. We understand this Work Plan will be submitted to USEPA for their review and approval.

Please contact us with any questions you may have regarding this project.

Regards,

STS CONSULTANTS, LTD.

Richard G. Berggreen, C.P.G.
Principal Geologist

Attachment

WORK PLAN
CAISSON INSTALLATION
ILLINOIS STREET VIADUCT
GRAND PIER CENTER
CHICAGO, ILLINOIS

DRAFT

TABLE OF CONTENTS

DRAFT

Property Owner: Grand Pier Center, LLC

Property Location: Parcel Bounded by Illinois (south), St. Clair Street (west), Columbus Drive (east), and Grand Avenue (north), excepting the northwest corner of this block.

Parcel ID Number:

WORK PLAN
CAISSON INSTALLATION
ILLINOIS STREET VIADUCT
GRAND PIER CENTER
CHICAGO, ILLINOIS

DRAFT

1.0 SCOPE OF WORK

An upper level roadway will be constructed over a portion of Illinois Street (Figure 1). This roadway will be supported on piers whose foundations are caissons drilled and constructed through the sidewalk adjacent to the right-of-way of Illinois Street (Figure 2). A total of 13 caissons are proposed to be installed, 7 on the south side of Illinois Street and 6 on the north side.

This work will involve drilling a 36 inch diameter caisson. The caisson will be drilled to a depth of 80 feet, will penetrate the urban fill which underlies this area of Chicago to a depth of approximately 8 - 10 feet, the natural sand present to a depth of 20 to 28 feet, generally getting deeper to the east, and into the glacial hard pan clays which extend to bedrock at greater than 100 feet deep. A boring plan and boring logs for geotechnical borings in Illinois Street and adjacent Grand Pier Center are included as Attachment 1.

The caissons will be drilled directly from the street level. No prior excavation, other than removal of existing sidewalk, will precede drilling. Subsequent construction of the caisson cap will entail excavation of a temporary opening 8 feet square and approximately 5 feet below street grade. That work will also require monitoring, as described in Section 2.0.

Cuttings from the caisson drilling will be brought up on the caisson auger flights and spun off for loading and transport. It is proposed that the screening for radiation, presented in Section 2.0, be conducted while the cuttings remain on the augers, and soil exhibiting evidence of contamination be spun off in a separate area from apparently clean material.

Upon completion of the drilling, the reinforcing steel will be placed in the drilled hole and concrete placed to complete the caisson. There will be no contact with soil except that which is brought up on the auger flights, until the area around each caisson top is excavated for construction of the caisson cap.

At that time an 8 foot square area will be saw cut around each caisson. Sidewalk, curb, gutter and street pavement will be removed and the soil excavated to a depth of 4.5 to 5 feet deep, using a small hydraulic excavator and hand digging. Forms will be constructed for the caisson cap. Reinforcing steel will be placed and the concrete poured. The forms will be removed and granular material, CA-6 or equivalent, will be used to fill the excavation, and the area will be re-paved.

When take material off sidewalk screen underneath

DRAFT

2.0 SOIL MONITORING

All pavement removed, including sidewalk, curb and gutter, and street pavement will be screened for radiation in accordance with the Highway Authority agreement, Attachment 2. Materials exhibiting readings indicative of levels exceeding 7.1 pCi/g will be handled as contaminated.

Soil will be screened on all augers returning cuttings from the urban fill and sand soils from the caissons. Material will be screened on the augers before it is spun off. If there are indications of elevated radiation, the material will be spun off onto an area underlain with plastic sheeting. The soil will be screened on the ground, and material exhibiting readings above the 7.1 pCi/g clean-up threshold will be loaded into Supersacks for disposal.

Monitoring will be done with NaI detectors which have been calibrated to the 7.1 pCi/g standards at the Kerr-McGee West Chicago facility.

Documentation will include recording the apparent depth of any cuttings which exhibit anomalous results, that is greater than 2 times background. Records will also document the instrument and technician conducting the monitoring. Separate records will be made for each caisson boring.

Monitor spoils that come off caisson

cut off 2 times Bkg

Highway Authority Agreement

DRAFT

3.0 MATERIAL HANDLING

Material exhibiting evidence of radiation at levels apparently above the 7.1 pCi/g, based on calibration of the survey instruments at the Kerr-McGee West Chicago facility, will be managed as contaminated. Soil and debris will be either loaded into Supersacks, or loaded directly into transport containers provided by Kerr-McGee.

Supersacks with soil will be secured inside the fenced area of Grand Pier Center until they are loaded into containers for transport. Containers will be surveyed clean on the exterior before they are released.

All lay down areas where soil was spun off the augers will be cleaned, swept and soil containerized in either Supersacks or transport containers.

DRAFT

4.0 HEALTH AND SAFETY

All persons potentially in contact with identified contaminated soils will require:

- 40 hour HAZWOPER training
- 8 hour project-specific radiation training
- Medical monitoring
- Personal radiation monitoring
- TLD radiation monitoring

Exclusion zones will be established around all identified contaminated soils. Provisions of the Health and Safety Plan (separate cover) concerning personal protective equipment, personal air monitoring and other applicable sections will be followed.

STS CONSULTANTS, LTD.

FIGURES

FIGURES

Notes
1. Site area = 89210 SF
2. Building coverage area = 88435 SF
3. Garage area = 17850 SF

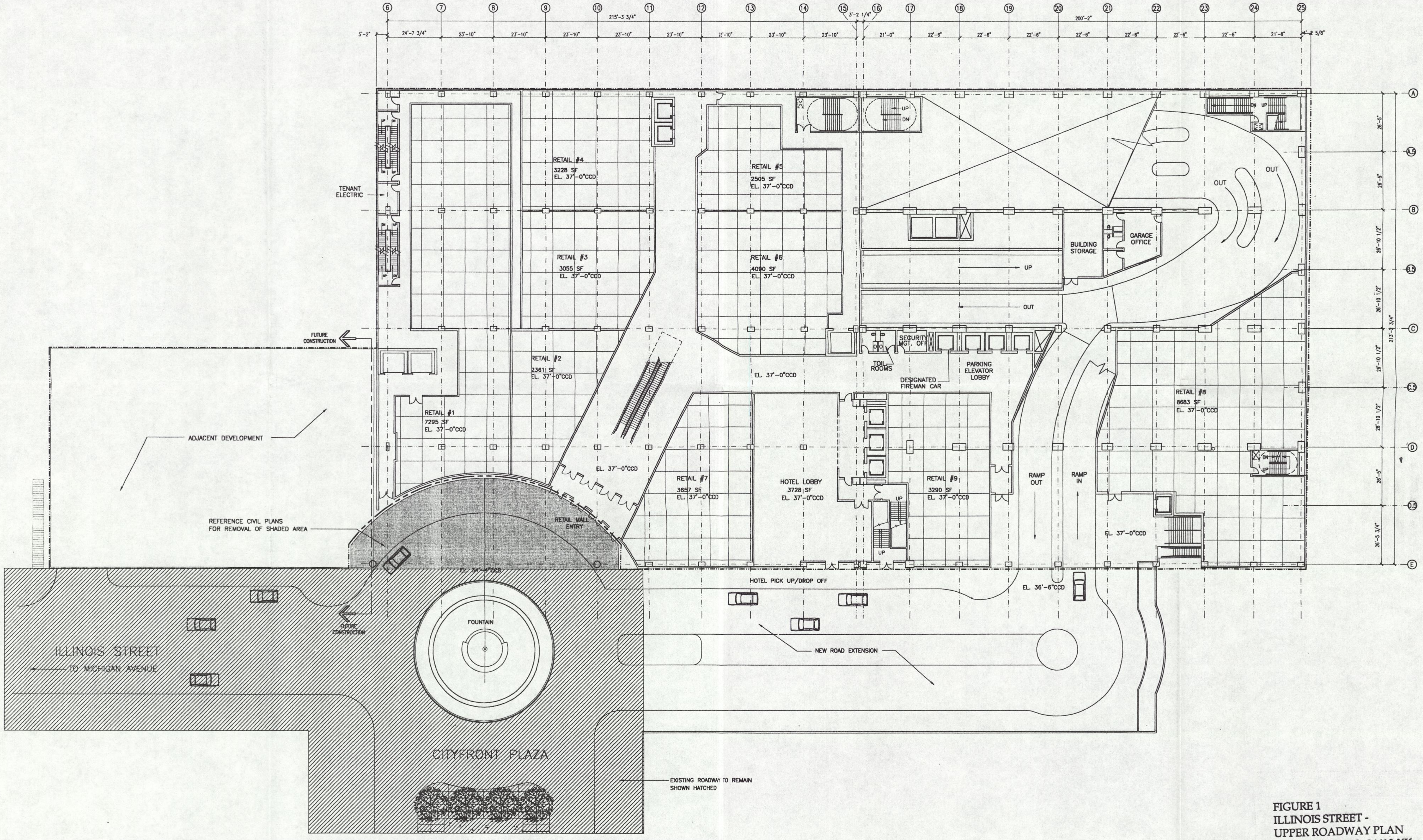


FIGURE 1
ILLINOIS STREET -
UPPER ROADWAY PLAN
STS PROJECT NO. 24418-XK

PLAZA / P1 LEVEL PLAN
SCALE: 1/16" = 1'-0"

N

NOTE: THIS SHEET IS SHOWN FOR INFORMATION ONLY

Loebl Schlossman & Hackl
Architecture • Planning • Interiors
130 East Randolph Drive
Suite 3400
Chicago, Illinois 60601
312.565.1800 Telephone
312.565.5912 Facsimile
www.lshdesign.com
abrundag@lshchicago.com

Grand Pier Center, LLC
Owner

R.M. Chin & Associates, Inc.
Developer

Morse Diesel International
Construction Consultant

TT-CBM Engineers
Structural Engineer

Environment Systems Designs
Mechanical Engineer

Bowman, Barrett & Associates, Inc.
Civil / Structural Engineer

GRAND PIER CENTER
ILLINOIS STREET
ILLINOIS STREET CHICAGO IL 60611

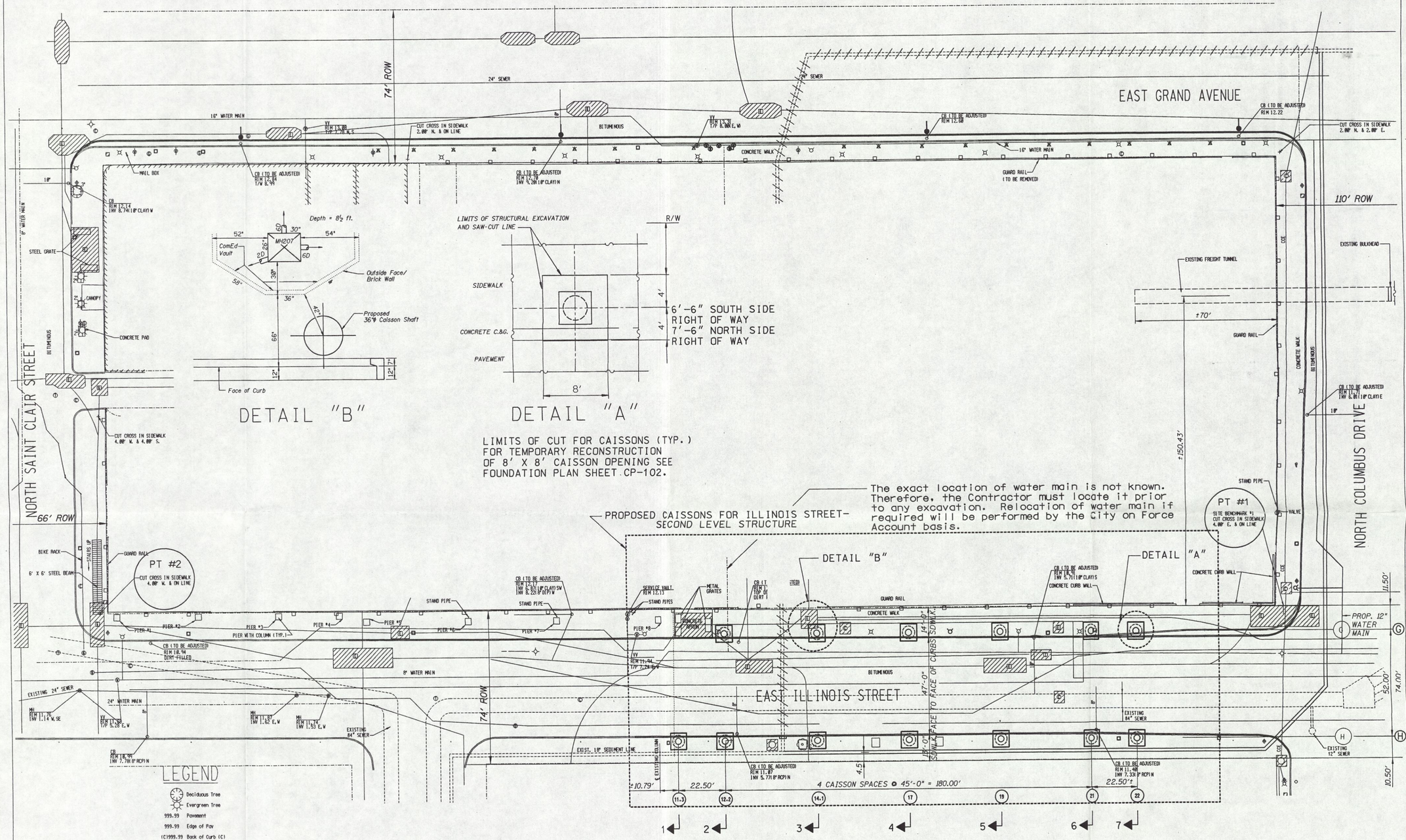
No.	Issue	Date
	Issued for Office of	
03	Underground Coordination	02-04-00
02	Foundation Permit	01-17-00
01	Caisson Permit	05-12-99

Drawn By: PGK
Checked By:
Scale: 1/16"=1'-0"
Project No.: 71801.00

Plaza / P1 Level Plan

Sheet No. **AE104**

F:\PROJECTS\78200\ACAD\PHASE 2\AE104.DWG PGK 02\11\00 10:3



FOR CROSS SECTIONS SEE SHEET CP-110.

LEGEND

- Deciduous Tree
- Evergreen Tree
- 999.99 Pavement
- 999.99 Edge of Pav
- (C)999.99 Back of Curb (C)
- (G)999.99 Flow Line (G)
- (W)999.99 Back of Walk (W)
- (TW)999.99 Top of Wall (TW)
- Fire Hydrant
- Valve Vault
- Water B-box
- Water Meter
- San. Manhole
- Catch Basin
- Inlet
- Light Pole
- Traffic Signal
- Parking Meter
- Sign Post
- Traffic Sig. Cont.
- Gas Valve
- ComEd
- City Elec
- Telephone
- G — Gas Main
- Storm Sewer Line
- E — ComEd
- City Elec
- Combined Sewer
- T — Telephone Cable
- W — Water Main
- Guard Rail

GENERAL NOTES:

The Illinois Department of Transportation "Standard Specifications for Road and Bridge Construction" dated January 1, 1997, and "Supplemental Specifications and Recurring Special Provisions" latest editions shall govern this work, except as directed by the Commisioner of the City of Chicago Department of Transportation.

The Contractor shall install and maintain adequate signs, traffic control devices, and warning devices, as approved by the City of Chicago Bureau of Traffic, to inform and protect the public during construction.

Contractor shall immediately remove soil, mud, or debris deposited on public streets. The Contractor shall, when directed and as often as directed by the City of Chicago or Owner, furnish all equipment, water, and labor necessary to clean the streets of all dust, dirt, and debris caused by his operations.

The Contractor shall obtain all necessary permits from the City of Chicago, prior to commencing construction.

Before commencing construction, the Contractor shall check the elevation of existing curb and gutter, pavement, driveways and alley pavement where new construction is to meet existing. If necessary, the grades shall be adjusted to the satisfaction of the Commissioner.

BEFORE START OF CONSTRUCTION
CALL CUAN: 1-312-774-7000
(CHICAGO UTILITY ALERT NETWORK)

WARNING

UTILITY INFORMATION IS BASED UPON FIELD MEASUREMENTS, AND THE BEST AVAILABLE RECORDS. FIELD DATA IS LIMITED TO THAT WHICH IS VISIBLE AND CAN BE MEASURED. THIS DOES NOT PRECLUDE THE EXISTENCE OF OTHER UNDERGROUND ITEMS. RECORD INFORMATION IS BASED UPON DATA COLLECTED FROM BOTH PUBLIC AND PRIVATE SOURCES. THE COMPLETENESS AND/OR ACCURACY OF THESE RECORDS CANNOT BE GUARANTEED, EXCEPT INSOFAR AS THEY CAN BE VERIFIED BY FIELD MEASUREMENT. PRIOR TO ANY EXCAVATION CONTACT "DIGGER" AT 312-744-7000, CHICAGO UTILITY ALERT NETWORK.

NOTES FOR SHEET CP-109:

1. PROPOSED BUILDING LINE IS LOCATED ON THE LINE FROM PT#1 TO PT#2.
2. CAISSON LOCATIONS AND STREET DIMENSIONS ARE OFFSETS FROM PROPOSED BUILDING LINE.
3. FOR CROSS SECTIONS SEE SHEET CP-110.
4. FOR PROPOSED UTILITY CONNECTION SEE SITE UTILITY PLAN SHEET C-2.

IN PROGRESS

FIGURE 2
ILLINOIS STREET VIADUCT CAISSON LOCATION PLAN STS PROJECT NO. 24418-XK

Loebl Schlossman & Hackl / Hague Richards
Architecture Planning Interiors
120 East Randolph Drive Suite 3400 Chicago, Illinois 60601-6303 312.565.8000 Telephone 312.565.3742 Fax

Morse Diesel International
Construction Manager

TT-CBM
Structural Engineer

BOWMAN, BARRETT & ASSOCIATES
Civil Engineer

Environment Systems Designs
Mechanical Engineer

GRAND PIER CENTER

ILLINOIS STREET
ILLINOIS STREET, CHICAGO, ILLINOIS 60611

No.	Revisions	Date
	ISSUED FOR OFFICE OF UNDERGROUND COORDINATION	02/04/
	ISSUED FOR PERMIT	11/17/0
	ISSUED FOR CAISSONS PERMIT	5/12/0
	PROGRESS PRINTING	6/25/0
	ISSUED FOR CAISSONS PERMIT	4/28/0

Drawn By:
Checked By:
Scale:
Project No.: 71800 Issued:

BRIDGE SITE UTILITY PLAN
CP-109
Sheet No.

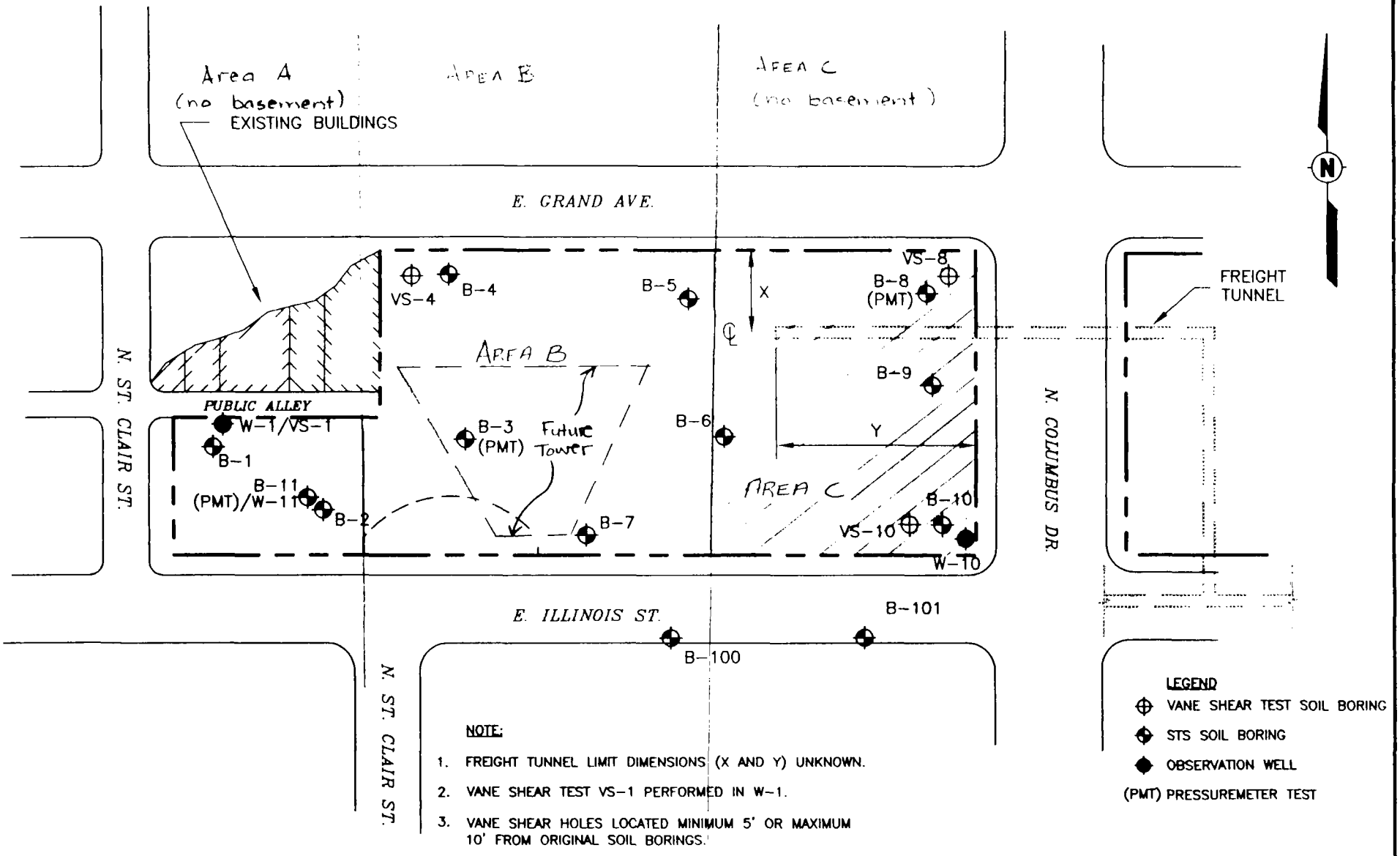
PRT. DATE: 07-07-98
N:\454\CADD\ROADWAY\454CSU02.DGN

STS CONSULTANTS, LTD.

ATTACHMENTS

ATTACHMENTS

ATTACHMENT 1 - GEOTECHNICAL BORING LOGS



STS Consultants Ltd.
Consulting Engineers

SOIL BORING LOCATION DIAGRAM
PROPOSED GRAND PIER CENTER DEVELOPMENT
225 EAST ILLINOIS STREET
CHICAGO, ILLINOIS

DRAWN BY	KKB	DATE	6-12-98
CHECKED BY	DR	DATE	6-12-98
APPROVED BY	WHW	DATE	6-12-98
CADFILE	X:\PROJECTS\24418\ss\G1SS1.dwg 06/15/1998 09:46		

STS PROJECT NO.	24418-SS
STS PROJECT FILE	G1SS1.dwg
SCALE	1"=100'±
FIGURE NO.	1

STS Consultants Ltd.

CLIENT: R.M. Chin & Associates, Inc.

LOG OF BORING NUMBER: B-1

PROJECT NAME: Grand Pier

ARCHITECT-ENGINEER: TT-CBM

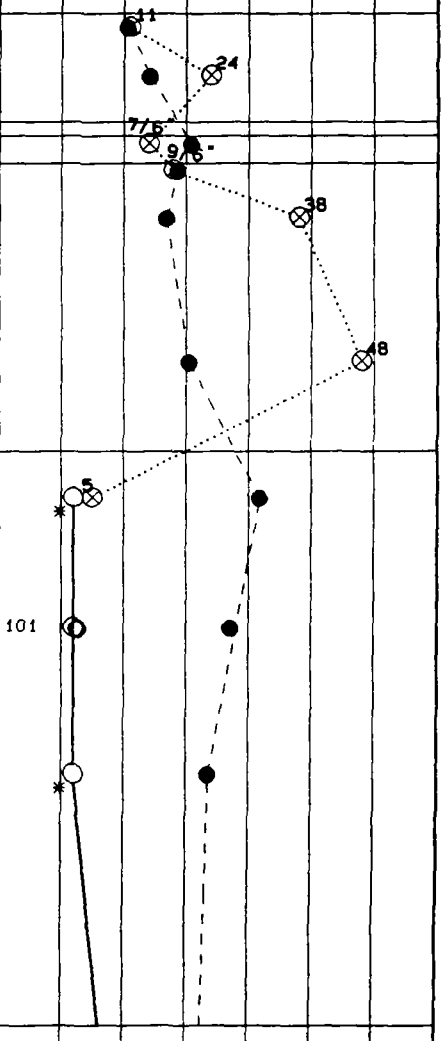
SITE LOCATION: NWC E. Illinois St. & N. Columbus Dr.; Chicago, IL

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE / RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}
				SURFACE ELEVATION 12.0 CCD +/-	
		PA		Driller notes 3 in. asphalt Driller notes miscellaneous fill	
5.0	1	SS		Fill: Silty fine to coarse sand, little fine to coarse gravel, trace clay - brown to black - medium dense - moist to wet (SM)	
	2	SS		Trace brick from 5-7 ft.	
		RB			
	3	SS		Fill: Driller notes concrete slab	
	3A	SS			
10.0		RB		Fill: Silty gravelly medium to coarse sand - brown to black - medium dense - moist to wet (SM)	
	4	SS		Fine to coarse sand, trace fine to coarse gravel and silt - brown - dense - moist to saturated (SM)	
		RB			
15.0	5	SS			
		RB			
20.0	6	SS		Silty clay, trace gravel, sand and shale - gray - soft to medium (CL)	
		RB			
25.0		ST			101
		RB			
30.0	8	ST			
35.0		RB			
40.0					



* Calibrated Penetrometer

... continued

The stratification lines represent the approximate boundary lines between soil types: in-situ, the transition may be gradual

STS JOB NO. 24418-SS | SHEET NO. 1 OF 3

STS Consultants Ltd.

CLIENT: R.M. Chin & Associates, Inc.

LOG OF BORING NUMBER: B-1

PROJECT NAME: Grand Pier

ARCHITECT-ENGINEER: TT-CBM

SITE LOCATION: NWC E. Illinois St. & N. Columbus Dr.; Chicago, IL

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1 2 3 4 5)

PLASTIC LIMIT % / WATER CONTENT % / LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}
					SURFACE ELEVATION 12.0 CCD +/-	
					Continued from previous page	
40.0	9	ST			Silty clay, trace gravel, sand and shale - gray - soft to medium (CL)	
45.0		RB				
50.0	10	ST				
55.0		RB				
60.0					Silty clay, trace fine gravel, fine to coarse sand, and shale - gray - very stiff to hard (CL)	
	11	ST			Silt seams in Sample 11.	
65.0		RB				
70.0	12	ST				
		RB				
75.0	13	ST				118
		PA				
	14	ST				
80.0		RB				
					* Calibrated Penetrometer	
					... continued	

The stratification lines represent the approximate boundary lines between soil types: in-situ, the transition may be gradual.

STS JOB NO. 24418-SS | SHEET NO. 2 OF 3

STS Consultants Ltd.

CLIENT: R.M. Chin & Associates, Inc.	LOG OF BORING NUMBER: B-1
PROJECT NAME: Grand Pier	ARCHITECT-ENGINEER: TT-CBM

SITE LOCATION: NWC E. Illinois St. & N. Columbus Dr.; Chicago, IL

SURFACE ELEVATION 12.0 CCD +/-

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.3
						Continued from previous page	
80.0		15	ST			Silty clay, trace fine gravel, fine to coarse sand, and shale - gray - hard to very stiff (CL)	
			RB				
		16	ST				127
			RB				
85.0		17	ST			Sand seams in Sample 17.	
			RB				
						Silt seams in Sample 18.	
90.0 90.5		18	ST			End of Boring Borehole grouted upon completion. Asphalt patch at ground surface. Casing used: 25 ft. of 4 in. Automatic-Mobile Hammer used for Standard Penetration Tests.	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.2 (1 2 3 4 5)

PLASTIC LIMIT % × — WATER CONTENT % ● — LIQUID LIMIT % △ (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT. ⊗ (10 20 30 40 50)

7.0

7+

7+

* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in-situ, the transition may be gradual.

WL 8.5 ft. WS	BORING STARTED 1/9/98	STS OFFICE Chicago Area-01	
WL	BORING COMPLETED 1/9/98	ENTERED BY KKB	SHEET NO. 3 OF 3
WL	RIG/FOREMAN Rotary/Lehtinen	APP'D BY DR	STS JOB NO. 24418-SS #

STS Consultants Ltd.

CLIENT: R.M. Chin & Associates, Inc.

LOG OF BORING NUMBER: B-2

PROJECT NAME: Grand Pier

ARCHITECT-ENGINEER: TT-CBM

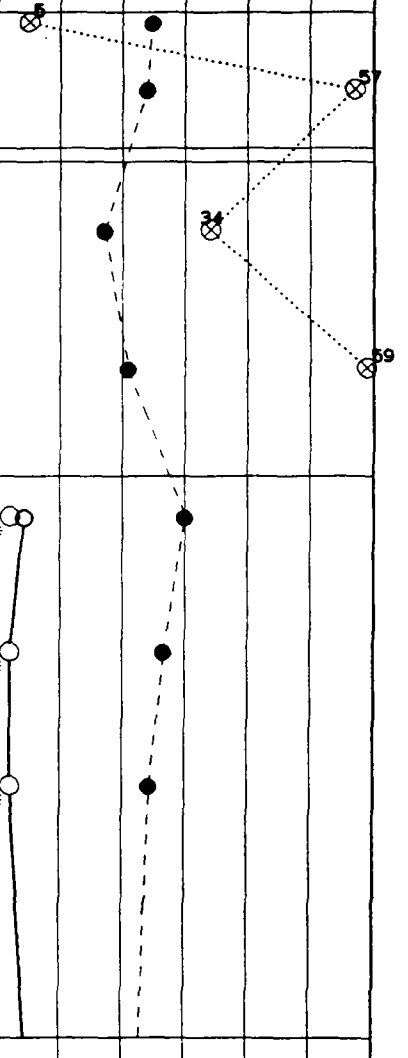
SITE LOCATION: NWC E. Illinois St. & N. Columbus Dr.; Chicago, IL

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1 2 3 4 5)

PLASTIC LIMIT % × — WATER CONTENT % ● — LIQUID LIMIT % △ (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT. ⊗ (10 20 30 40 50)

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}
						SURFACE ELEVATION 12.0 CCD +/-	
			PA			Driller notes 2 in. of asphalt.	
			PA			Driller notes 6 in. of crushed stone base course.	
		1	SS			Driller notes miscellaneous fill.	
5.0			PA			Fill: Silty sand and fractured bricks, trace fine to coarse gravel - dark brown to yellow brown - loose to very dense - moist (SM to GM)	
		2	SS				
			PA				
			RB			Driller notes 6 in. concrete slab	
10.0		4	SS			Fine to medium sand, trace silt and fine gravel - brown - dense to very dense - moist to wet (SP)	
			RB				
15.0		5	SS				
			RB				
20.0		6	ST			Silty clay, trace sand and shale - soft to medium (CL)	96
			RB				
25.0		7	ST				
			RB				
30.0		8	ST				
35.0			RB				
40.0							



* Calibrated Penetrometer

... continued

The stratification lines represent the approximate boundary lines between soil types: in-situ, the transition may be gradual

STS JOB NO. 24418-SS

STS Consultants Ltd.

CLIENT: R.M. Chin & Associates, Inc.

LOG OF BORING NUMBER: B-3

PROJECT NAME: Grand Pier

ARCHITECT-ENGINEER: TT-CBM

SITE LOCATION: NWC E. Illinois St. & N. Columbus Dr.; Chicago, IL

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE / RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}
		PA		SURFACE ELEVATION 12.0 CCD +/-	
		PA		Driller notes 3 in. of asphalt.	
	1	SS		Driller notes crushed stone base course.	
	2	SS		Miscellaneous fill: Fine to coarse sand, some brick, wood, cinders, concrete and gravel, little silt, trace clay - brown and black - medium dense to loose	
		PA			
5.0	3	SS			
		PA			
	4	SS			
		PA			
10.0	5	SS		Fine to medium sand, trace silt - brown - dense - moist to saturated (SP)	
		PA			
15.0	6	SS		Little fine gravel in Sample 6.	
		RB			
20.0	7	ST		Silty clay, trace shale - gray - soft (CL)	97
		RB			
25.0	8	ST			
		RB			
30.0	9	ST			
		RB			
35.0					
		RB			
40.0	10	ST		Trace sand in Sample 10. Consistency of Sample 10 medium.	
		RB			
45.0					
50.0				... continued	

* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in-situ, the transition may be gradual.

STS JOB NO. 24418-SS

STS Consultants Ltd.

CLIENT: R.M. Chin & Associates, Inc.

LOG OF BORING NUMBER: B-4

PROJECT NAME: Grand Pier

ARCHITECT-ENGINEER: TT-CBM

SITE LOCATION: NWC E. Illinois St. & N. Columbus Dr.; Chicago, IL

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}
						SURFACE ELEVATION 13.0 CCD +/-	
			PA			Driller notes 2 in. of asphalt.	
			PA			Driller notes crushed stone base course	
		1	SS			Fill: Silty fine to coarse sand, some cinders, trace gravel and brick - black - loose to medium dense - moist (SM)	
5.0			PA				
		2	SS				
			PA				
		3	SS*				
		3A					
		3B					
			PA			Fine to medium sand, trace silt and gravel - brown - medium dense to very dense - moist to saturated (SP)	
10.0		4	SS				
			PA				
15.0		5	SS				
			RB				
20.0		6	SS				
			RB				
25.0						Silty clay, trace sand, gravel and shale - gray - soft (CL)	
		7	ST				
			RB				
30.0		8	ST				
			RB				
35.0							
40.0							

... continued

* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in-situ, the transition may be gradual.

STS JOB NO. 24418-SS

STS Consultants Ltd.

CLIENT: R.M. Chin & Associates, Inc.

LOG OF BORING NUMBER: B-5

PROJECT NAME: Grand Pier

ARCHITECT-ENGINEER: TT-CBM

SITE LOCATION: NWC E. Illinois St. & N. Columbus Dr.; Chicago, IL

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1 2 3 4 5)

PLASTIC LIMIT % × — WATER CONTENT % ● — LIQUID LIMIT % △ (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT. ⊗ (10 20 30 40 50)

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}
					SURFACE ELEVATION 13.0 CCD +/-	
					Driller notes 3 in. of asphalt.	
					Driller notes 3 in. of crushed stone base course.	
	1	SS			Driller notes 6 in. of concrete	
		PA			Fill: Silty fine to medium sand, little fine gravel, trace clay, cinders and bricks - black - loose (SM)	
5.0	2	SS				
		PA				
	3	SS				
	3A	SS				
		PA				
10.0	4	SS			Fine to coarse sand, trace silt and gravel - brown - medium dense to dense - moist to wet (SP)	
		PA				
15.0	5	SS				
		RB			Little fine to medium gravel in Samples 5 and 6.	
20.0	6	SS			Density of Sample 6 extremely dense.	
		RB				
25.0	7	ST			Silty clay, trace shale - gray - soft to medium (CL)	108
		RB				
30.0	8	ST			Consistency of Sample 8 medium to stiff.	
35.0		RB				
40.0						

6 2 2/6" 6" 29 35 85

* Calibrated Penetrometer

... continued

The stratification lines represent the approximate boundary lines between soil types in-situ, the transition may be gradual.

STS JOB NO. 24418-SS | SHEET NO. 1 OF 3

STS Consultants Ltd.

CLIENT: R.M. Chin & Associates, Inc.

LOG OF BORING NUMBER: B-6

PROJECT NAME: Grand Pier

ARCHITECT-ENGINEER: TT-CBM

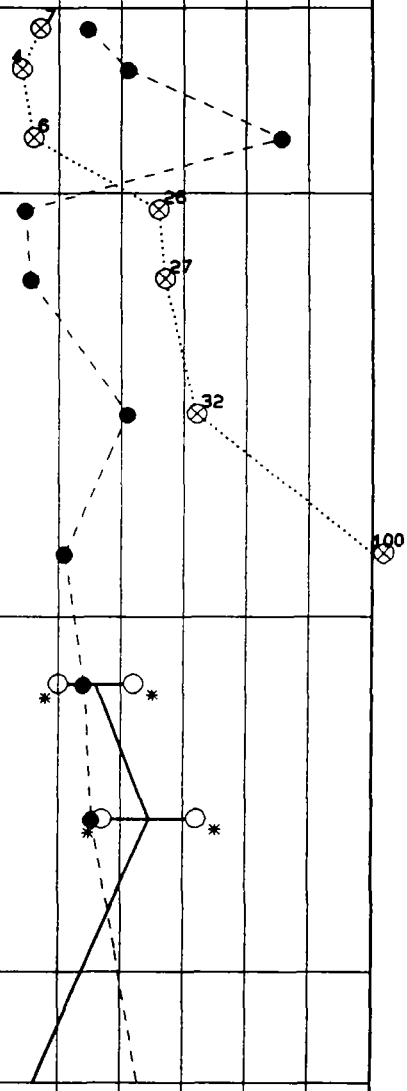
SITE LOCATION: NWC E. Illinois St. & N. Columbus Dr.; Chicago, IL

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1 2 3 4 5)

PLASTIC LIMIT % × — WATER CONTENT % ● — LIQUID LIMIT % △ (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT. ⊗ (10 20 30 40 50)

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}
						SURFACE ELEVATION 12.0 CCD+/-	
			CCD PA			Driller notes 3 in.of asphalt.	
		1	SS			Driller notes 6 in. of crushed stone base course.	
		2	SS			Fill: Silty fine to medium sand, little fine gravel, trace clay, cinders and bricks - black - loose (SM)	
5.0			PA				
		3	SS			Trace organics in Sample 3.	
			PA				
		4	SS			Fine to medium sand, trace silt and fine gravel - brown - medium dense to dense - moist to saturated (SP)	
10.0			PA				
		5	SS				
			PA				
15.0		6	SS				
			PA				
20.0		7	SS			Density in Sample 7 extremely dense.	
			RB			Silty clay, little sand and gravel, trace shale - gray - stiff to very stiff (CL)	
25.0		8	ST				
			RB				
30.0		9	ST				
35.0			RB				
						Silty clay, trace gravel and shale - gray - medium to stiff (CL)	
40.0							



* Calibrated Penetrometer

... continued

The stratification lines represent the approximate boundary lines between soil types: in-situ, the transition may be gradual.

STS JOB NO. 24418-SS

STS Consultants Ltd.

CLIENT: R.M. Chin & Associates, Inc.

LOG OF BORING NUMBER: B-7

PROJECT NAME: Grand Pier

ARCHITECT-ENGINEER: TT-CBM

SITE LOCATION: NWC E. Illinois St. & N. Columbus Dr.; Chicago, IL

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}
						SURFACE ELEVATION 12.0 CCD +/-	
			PA			Driller notes 3 in. of asphalt.	
			PA			Driller notes 9 in. of concrete.	
		1	SS			Fill: Silty fine to coarse sand, little fine to medium gravel, trace topsoil, cinders and bricks - black (SM)	
5.0			PA				
		2	SS				
			PA				
		3	SS*				
		3A	SS			Fine to medium sand, trace silt and gravel - brown - medium dense to extremely dense - moist (SP)	
10.0			PA				
		4	SS				
			PA				
15.0		5	SS				
			RB				
20.0		6	SS				
			RB				
25.0						Silty clay, trace shale - gray - soft (CL)	
		7	ST				
			RB				
30.0		8	ST				
35.0			RB				
40.0							

5 — 3 — 5/6" — 23 — 28 — 73 — 101 — 61.8

100

* Calibrated Penetrometer

... continued

The stratification lines represent the approximate boundary lines between soil types: in-situ, the transition may be gradual.

STS JOB NO. 2441B-SS

STS Consultants Ltd.

CLIENT: R.M. Chin & Associates, Inc.

LOG OF BORING NUMBER: B-8

PROJECT NAME: Grand Pier

ARCHITECT-ENGINEER: TT-CBM

SITE LOCATION: NWC E. Illinois St. & N. Columbus Dr.; Chicago, IL

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1 2 3 4 5)

PLASTIC LIMIT % | WATER CONTENT % | LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}
		PA			SURFACE ELEVATION 13.0 CCD +/-	
		PA			Driller notes 3 in. of asphalt.	
		PA			Driller notes crushed stone base course.	
		PA			Driller notes brick cobblestone.	
		PA			Driller notes concrete.	
	1	SS			Fill: Silty fine to coarse sand, little gravel, trace clay, brick and cinders - black and brown - loose (SM)	
5.0		PA				
	2	SS				
		PA				
	3	SS			Fine to medium sand, trace silt and gravel - brown - medium dense to dense - moist to saturated (SP)	
10.0		PA				
	4	SS			Density of Sample 3 loose.	
		PA				
15.0					Density of Sample 5 very dense.	
	5	SS				
		RB				
20.0						
	6	SS				
		RB				
25.0					Silty fine to medium sand, trace gravel - gray - medium dense - saturated (SM)	
	7	SS				
	7A	SS			Silty clay, trace sand - gray - stiff (CL)	
		RB				
30.0					Silty clay, trace sand and shale - gray - soft (CL)	
	8	ST				
35.0		RB				
40.0						

* Calibrated Penetrometer

... continued

The stratification lines represent the approximate boundary lines between soil types in-situ, the transition may be gradual.

STS JOB NO. 24418-SS | SHEET NO. 1 OF 4

STS Consultants Ltd.

CLIENT: R.M. Chin & Associates, Inc.

LOG OF BORING NUMBER: B-8

PROJECT NAME: Grand Pier

ARCHITECT-ENGINEER: TT-CBM

SITE LOCATION: NWC E. Illinois St. & N. Columbus Dr.; Chicago, IL

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE / RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}
				SURFACE ELEVATION 13.0 CCD +/-	
				Continued from previous page	
40.0	9	ST		Silty clay, trace sand and shale - gray - soft (CL)	
				Consistency of Sample 9 stiff to very stiff.	
45.0		RB			
50.0	10	ST			
55.0		RB		Silty clay, trace sand, gravel and shale - gray - stiff to very stiff (CL)	
60.0	11	ST			
65.0		RB			
70.0	12	ST			
		RB			
75.0	13	ST		Silty clay, trace sand and shale - gray - hard to very stiff (CL)	122
		RB			
	14	ST			113
80.0		RB			

* Calibrated Penetrometer

... continued

The stratification lines represent the approximate boundary lines between soil types: in-situ, the transition may be gradual.

STS Consultants Ltd.

CLIENT: R.M. Chin & Associates, Inc.

LOG OF BORING NUMBER: B-8

PROJECT NAME: Grand Pier

ARCHITECT-ENGINEER: TT-CBM

SITE LOCATION: NWC E. Illinois St. & N. Columbus Dr.; Chicago, IL

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}
						SURFACE ELEVATION 13.0 CCD +/-	
						Continued from previous page	
80.0							
		15	ST			Silty clay, trace sand and shale - gray - hard to very stiff (CL)	
			RB				
		16	ST			Silty clay, trace gravel, sand and shale - gray - hard (CL)	
			RB				
85.0						Pressuremeter Tests 82.5-85'	
		17	ST				
			RB				
		18	ST			Pressuremeter Test at 87.5-90'.	
90.0			RB				
		19	SS*			Silty clay, trace sand and shale - gray - hard (CL)	
						Pressuremeter Test at 92.5 to 95'.	
95.0			RB				
		20	SS*				
100.0							
			RB				
105.0							
		21	SS*				
110.0						Gravelly silt, little clay, trace sand - gray - extremely dense - wet (ML)	
			RB				
115.0							
		22	SS*			Driller notes silty clay from 118-123'.	
120.0							

* Calibrated Penetrometer

... continued

The stratification lines represent the approximate boundary lines between soil types: in-situ, the transition may be gradual.

STS JOB NO. 2441B-SS

SHEET NO. 3 OF 4

STS Consultants Ltd.	CLIENT: R.M. Chin & Associates, Inc.	LOG OF BORING NUMBER: B-8
	PROJECT NAME: Grand Pier	ARCHITECT-ENGINEER: TT-CBM

SITE LOCATION: NWC E. Illinois St. & N. Columbus Dr.; Chicago, IL

DEPTH (FT) / ELEVATION (FT)	SAMPLE N	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.3	UNCONFINED COMPRESSIVE STRENGTH TONS/FT.2 (1 2 3 4 5) / PLASTIC LIMIT % / WATER CONTENT % / LIQUID LIMIT % (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)
					SURFACE ELEVATION 13.0 CCD +/-		
					Continued from previous page		
120.0					Gravelly silt, little clay, trace sand - gray - extremely dense - wet (ML)		
		RB			Driller notes silty clay from 118-123'.		
125.0					Driller notes limestone bedrock from 125.5-127.5'.		
127.5					End of Boring Borehole grouted upon completion. Asphalt patch at ground surface. Casing used: 30 ft. of 4 in. Automatic-Mobile Hammer used for Standard Penetration Tests. SS* = Standard penetration value based on first 6 inches of driving.		

The stratification lines represent the approximate boundary lines between soil types: in-situ, the transition may be gradual.

WL 13.5 ft. WD	BORING STARTED 1/19/98	STS OFFICE Chicago Area-01	
WL 15 ft. BCR; 13 ft. ACR	BORING COMPLETED 1/20/98	ENTERED BY KKB	SHEET NO. 4 OF 4
WL	RIG/FOREMAN Rotary/Baker	APP'D BY DR	STS JOB NO. 24418-SS

STS Consultants Ltd.

CLIENT: R.M. Chin & Associates, Inc.

LOG OF BORING NUMBER: B-9

PROJECT NAME: Grand Pier

ARCHITECT-ENGINEER: TT-CBM

SITE LOCATION: NWC E. Illinois St. & N. Columbus Dr.; Chicago, IL

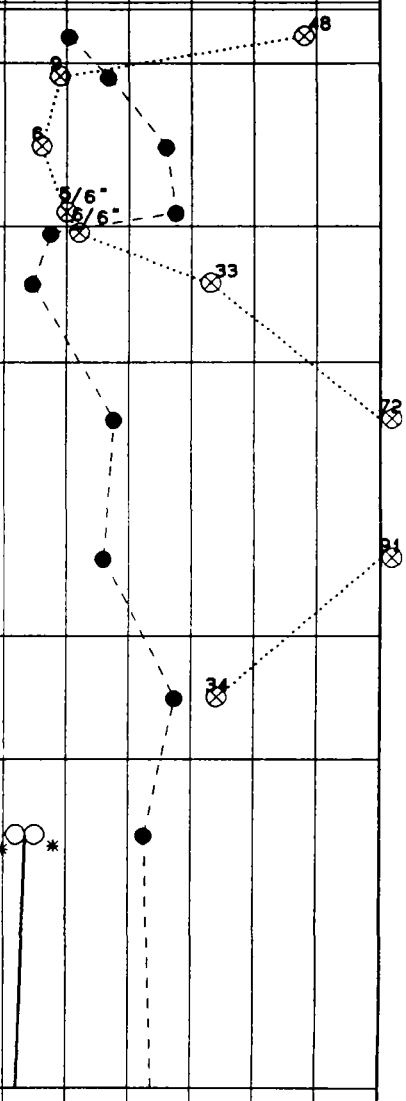
DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
			PA			SURFACE ELEVATION 13.0 CCD+/-
			PA			Driller notes 3 in. of asphalt
		1	SS			Driller notes crushed stone base course
		2	SS			Fill: Fine to coarse sand, little fine gravel, trace silt, concrete, cinders and brick - black - dense (SP)
5.0			PA			
		3	SS			Fill: Fine to coarse sand and cinders, little fine gravel, trace brick - black - loose (SP)
			PA			Driller notes slight petroleum odor.
		4	SS			
		4A	SS			
			PA			Fine to medium sand, trace silt and gravel - brown - dense (SP)
10.0		5	SS			Driller notes slight petroleum odor.
			PA			
15.0						Fine to coarse sand, trace silt and gravel - gray - very dense to extremely dense - moist (SP)
		6	SS			
			RB			
20.0		7	SS			
			RB			
25.0						Fine to medium sand, little silt - gray and brown - dense - saturated (SP)
		8	SS			
			RB			Silty clay, trace sand and shale - gray - soft (CL)
30.0		9	ST			
			RB			
35.0						
40.0						

UNIT DRY WT. LBS./FT.3

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.2: 1 2 3 4 5

PLASTIC LIMIT % × — WATER CONTENT % ● — LIQUID LIMIT % △: 10 20 30 40 50

STANDARD PENETRATION BLOWS/FT. ⊗: 10 20 30 40 50



* Calibrated Penetrometer

... continued

The stratification lines represent the approximate boundary lines between soil types: in-situ, the transition may be gradual.

STS JOB NO. 24418-SS | SHEET NO. 1 OF 3

STS Consultants Ltd.

CLIENT: R.M. Chin & Associates, Inc.

LOG OF BORING NUMBER: B-10

PROJECT NAME: Grand Pier

ARCHITECT-ENGINEER: TT-CBM

SITE LOCATION: NWC E. Illinois St. & N. Columbus Dr.; Chicago, IL

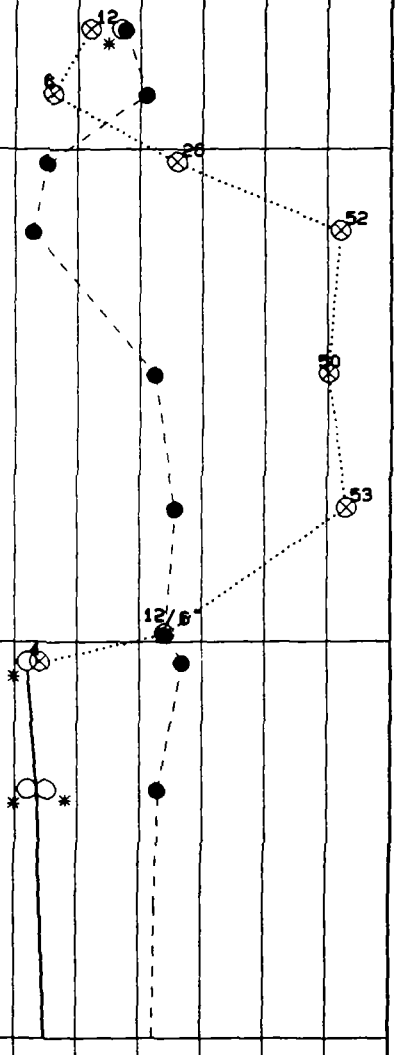
UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1 2 3 4 5)

PLASTIC LIMIT % × — WATER CONTENT % ● — LIQUID LIMIT % △ (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT. ⊗ (10 20 30 40 50)

UNIT DRY WT. LBS./FT.^{3}

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
						SURFACE ELEVATION 12.0 CCD+/-
			PA			Driller notes 2 in. of asphalt
			PA			Driller notes crushed stone base course
		1	SS			Fill: Silty fine to coarse sand and cinders with trace brick and gravel - black - moist (SM)
5.0			PA			
		2	SS			
			PA			
		3	SS			Fine to coarse sand, little gravel, trace silt - brown - medium dense to dense - moist to saturated (SP)
10.0			PA			
		4	SS			
			PA			
15.0		5	SS			
			RB			
20.0		6	SS			
			RB			
25.0		7	SS*			Coloring of Sample 7 slightly gray.
		7A	SS			Silty clay, trace sand, gravel and shale - gray - soft to medium (CL)
			RB			
30.0		8	ST			
			RB			
35.0						
40.0						



* Calibrated Penetrometer

... continued

The stratification lines represent the approximate boundary lines between soil types: in-situ, the transition may be gradual.

STS JOB NO. 24418-SS | SHEET NO. 1 OF 3

STS Consultants Ltd.

CLIENT: R.M. Chin & Associates, Inc.

LOG OF BORING NUMBER: B-11

PROJECT NAME: Grand Pier

ARCHITECT-ENGINEER: TT-CBM

SITE LOCATION: NWC E. Illinois St. & N. Columbus Dr.; Chicago, IL

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1 2 3 4 5)

PLASTIC LIMIT % × — WATER CONTENT % ● — LIQUID LIMIT % △ (10 20 30 40 50)

STANDARD PENETRATION ⊗ BLOWS/FT. (10 20 30 40 50)

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}
						SURFACE ELEVATION 12.0 CCD	
			PA			Blank drill through urban fill and sand strata.	
5.0							
10.0							
15.0							
						Blank drill through gray silty clay.	
20.0			RB				
25.0							
30.0							
35.0							
40.0							

... continued

The stratification lines represent the approximate boundary lines between soil types in-situ, the transition may be gradual.

STS JOB NO. 24418-SS

STS Consultants Ltd.

CLIENT: R.M. Chin & Associates, Inc.

LOG OF BORING NUMBER: B-100

PROJECT NAME: Grand Pier Center

ARCHITECT-ENGINEER: TT-CBM

SITE LOCATION: NWC E. Illinois St. & N. Columbus Dr.; Chicago, IL

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)

UNIT DRY WT. LBS./FT.^{3}

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE RECOVERY	DESCRIPTION OF MATERIAL
			PA		SURFACE ELEVATION ± +12.5 CCD
			PA		Driller's note: 4" of concrete sidewalk
		1	SS		Fill: Fine to medium sand, little gravel, trace cinders, brick and concrete - brown and black - medium dense (SP)
			PA		
		2	SS		
5.0			PA		
		3	SS		
			PA		
		4	SS		Relative density in S-4 loose.
10.0			PA		
		5	SS		Fine to medium sand, trace fine gravel - brown - medium dense to very dense - moist to saturated (SP)
			RB		
		6	S		
			RB		
15.0		7	SS		
			RB		
20.0		8	SS		
			RB		Silty clay, trace shale - gray - soft (CL)
25.0		9	SS		
			RB		
30.0		10	ST		
			RB		
35.0					
40.0					

* Calibrated Penetrometer

... continued

The stratification lines represent the approximate boundary lines between soil types: in-situ, the transition may be gradual.

STS JOB NO. 24418-SS

STS Consultants Ltd.

CLIENT: R.M. Chin & Associates, Inc.

LOG OF BORING NUMBER: B-101

PROJECT NAME: Grand Pier Center

ARCHITECT-ENGINEER: TT-CBM

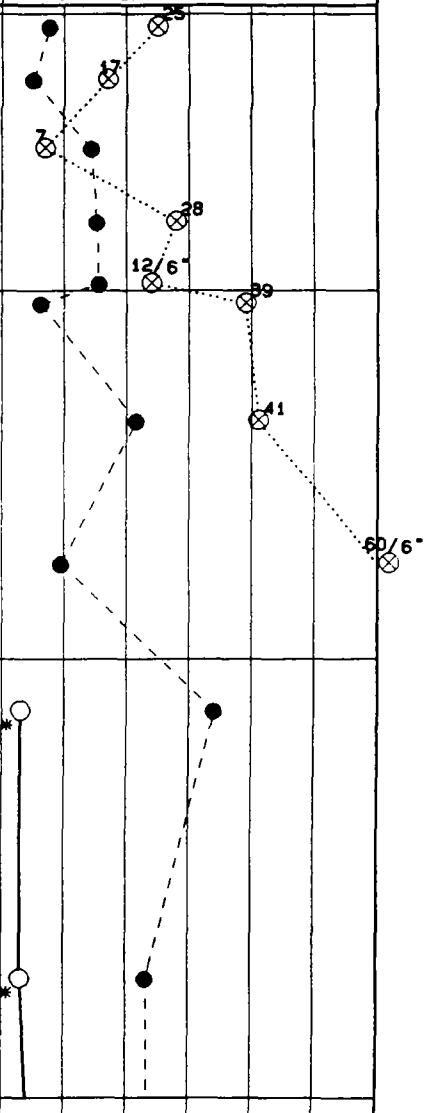
SITE LOCATION: NWC E. Illinois St. & N. Columbus Dr.; Chicago, IL

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1 2 3 4 5)

PLASTIC LIMIT % | WATER CONTENT % | LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE / RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}
				SURFACE ELEVATION 12.5 CCD	
		PA		Driller's note: 4" of concrete sidewalk	
	1	SS		Fill: Fine to medium sand, little gravel, trace clay, cinders, brick and concrete - brown and black - medium dense to dense (SP)	
		PA			
	2	SS			
5.0		PA		Some concrete in S-1 and S-2.	
	3	SS		Relative density in S-3 loose.	
		PA			
	4	SS			
10.0		PA			
	5	SS			
	5A	SS		Fine to medium sand, trace fine gravel and silt - brown - dense - moist (SP)	
		RB			
15.0	6	SS			
		RB			
20.0	7	SS			
		RB			
25.0				Silty clay, trace shale - gray - soft (CL)	
	8	ST			
30.0		RB			
35.0	9	ST			
40.0					



* Calibrated Penetrometer

... continued

The stratification lines represent the approximate boundary lines between soil types in-situ, the transition may be gradual.

STS JOB NO. 24418-SS | SHEET NO. 1 OF 3

ATTACHMENT 2 - HIGHWAY AUTHORITY AGREEMENT

No P.I.N. applicable 99924673
Document affects public way.

RIGHT-OF-WAY AGREEMENT

This Right-of-Way Agreement ("Agreement") is entered into this 27th day of Sept., 1999 by and among River East, L.L.C. ("River East") and Kerr-McGee Chemical L.L.C. ("Kerr-McGee"), together referred to herein as the Obligors ("Obligors"), and the City of Chicago ("City"), as follows:

1. This Agreement is not binding on the City until it is executed by a duly authorized representative of the City. Prior to execution, this Agreement constitutes an offer by the Obligors. The duly authorized representatives of the Obligors have signed this Agreement, and this Agreement is binding upon them and their successors by merger or reorganization, upon execution by the City.

2. The Obligors stipulate:

   a. The Site is located at 316 E. Illinois Street, Chicago, Illinois ("the Site"). The Site is and has been for multiple decades, used as an asphalt-paved parking lot. The Site is bounded by Grand Avenue, McClurg Court, Illinois Street and Columbus Drive.

   b. On June 3, 1993, the United States Environmental Protection Agency ("USEPA") and the Illinois Department of Nuclear Safety ("IDNS") conducted a joint investigation at the Site and verified the presence of radioactivity below the asphalt surface of the Site at levels above natural background. USEPA determined that the use of the Site as a parking lot posed a negligible risk to the public.

   c. A historical search determined that in the 1920s and 1930s a company known as the Lindsay Light Company leased the Site for the processing of thorium ores. Lindsay Light is a predecessor of Kerr-McGee. An ingredient in gas mantel manufacturing is thorium extracted from sand and formed into a solution into which mantels were dipped during the manufacturing process. It is believed that Section 11(e) (2) material, 42 U.S.C. §2014(e)(2) from this processing process is found at and around the Site ("Thorium Residuals").

   d. On January 27, 1994, the Chicago Dock & Canal Trust ("Chicago Dock") (a predecessor to River East), entered into an Administrative Order by Consent ("AOC") with USEPA to investigate and study the extent of Thorium Residuals at

the Site. The study was completed in May, 1994. A final report concerning the extent of contamination was delivered to USEPA on October 17, 1995, and the study was approved by USEPA on March 13, 1996. The final report concluded, inter alia, that there were twelve subsurface areas at the Site which exhibited elevated gamma radiation levels. The AOC is Attachment B.

e. On June 6, 1996, the USEPA issued a Unilateral Administrative Order ("UAO") to Chicago Dock and Kerr-McGee directing that a removal action be conducted at the Site pursuant to Section 106(a) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended ("CERCLA"), 42 U.S.C. §9606(a). The UAO established criteria (the "Cleanup Criteria") for Thorium Residuals of 7.1 picoCuries per gram total radium – 5 picoCuries per gram total radium above background. The UAO is attached as Attachment C.

f. Pursuant to the UAO and with approval of USEPA, Chicago Dock and Kerr-McGee conducted and completed a removal action at the Site. This remediation took several months during CY1996 and 1997 and involved the removal and disposal of soils from the Site.

g. During the removal action, testing along Illinois Street and Columbus Drive revealed deposits of Thorium Residuals which could not be readily excavated. Information regarding the known location of this contamination was provided to the City during a meeting on June 26, 1997, and in subsequent correspondence dated July 14, 1997. Attachment D depicts the portions of Grand Avenue, Illinois Street , McClurg Court and Columbus Drive rights-of-way adjacent to the Site that are the subject of this Agreement ("designated rights-of-way"). The impacted areas of the designated rights-of-way adjacent to the Site where Thorium Residuals are known to be located ("impacted rights-of-way") are described on Attachment E. If subsequent sampling and analysis indicates the presence of contaminants associated with Thorium Residuals beneath the designated rights-of-way, then those areas shall be subject to and covered by this Agreement.

h. Attached as Attachment E is a site map showing the known areas of Thorium Residuals in the impacted rights-of-way, and the relative concentration of the Thorium Residuals governed by the UAO.

3. The City stipulates that it holds the designated rights-of-way adjacent to the Site in trust for the public and has jurisdiction over the designated rights-of-way.

4. The parties stipulate that:

a. This Agreement is intended to meet the requirements of the United States Environmental Protection Agency regarding Thorium Residuals.

b. This Agreement shall run with the land constituting the designated rights-of-way and shall be recorded by the Obligors at their expense with the Cook County

Recorder of Deeds on the property described in Attachment D (the designated rights-of-way). Within thirty (30) days of such recording with the Cook County Recorder of Deeds, the Obligors shall provide the City a copy of the Agreement that has been stamped by the Cook County Recorder of Deeds to indicate that it has been recorded with that office. No filing or notice will be referenced against the Site.

c. This Agreement shall be null and void should the United States Environmental Protection Agency not approve it.

5. The City agrees that it will limit access to soil as described herein under portions of the impacted rights-of way described in Attachment E and in any supplemental exhibits as provided in ¶2(g) that exceed USEPA Cleanup Criteria, as provided in Code Section 10-20-100, et.seq. subject to the following conditions:

a. Where the pavement and sidewalk in the impacted rights-of-way are to be considered engineered barriers to gamma radiation emanating from Thorium Residuals, the Obligors agree to reimburse the City for maintenance activities requested by the Obligors. The City does not agree to maintain the designated rights-of-way, nor does it guarantee that the designated rights-of-way will continue as a roadway or sidewalk, or that the impacted rights-of-way will always be maintained as an engineered barrier.

b. This Agreement does not in any way limit the City's authority to construct. reconstruct, repair or maintain and operate the designated rights-of-way upon the property or other portions of the designated rights-of-way subsequently identified as containing contaminants associated with Thorium Residuals, or to allow others to use the designated rights-of-way. To that extent, the City reserves the right to identify, investigate, and remove soil contaminated with Thorium Residuals above the Cleanup Criteria from the impacted rights-of-way or from other portions of the designated rights-of-way adjacent to the Site subsequently identified as containing contaminants associated with Thorium Residuals and to dispose of them in accordance with applicable environmental regulations so as to avoid causing a further release of the contaminants and to protect human health and the environment. The Obligors shall reimburse the reasonable actual costs incurred by the City or its contractors or agents in so identifying, investigating, removing, storing, handling or disposing of soil contaminated with Thorium Residuals above the Cleanup Criteria, and it shall not be a defense for the Obligors that those costs were not consistent with or required by United States Environmental Protection Agency regulations, guidelines or policies. Prior to incurring any such costs, the City shall first give the Obligors thirty days notice, unless there is an urgent reason otherwise, to remove or dispose of soil contaminated with Thorium Residuals above the Cleanup Criteria to the extent necessary for the City's work. The City will cooperate with the Obligors in the conduct of the work including providing reasonable and appropriate access. USEPA shall also be forwarded a copy of this notice. Failure to give this

opportunity to the Obligors shall not be a defense to a claim for reimbursement or that the work should not have been done. If no such notice and opportunity are provided by the City to the Obligors and there was no urgent reason otherwise, the City's claim for reimbursement against the Obligors for such costs shall not exceed $10,000.00. For the purpose of this Agreement only, there is a rebuttable presumption that Thorium Residuals found in the portions of the impacted rights-of-way or in other portions of the designated rights-of-way subsequently identified as containing contaminants associated with Thorium Residuals arose from the release of Thorium Residuals from the Site. Should the Obligors not reimburse the costs identified here, this Agreement shall be null and void in addition to such other remedies as may be available to the City.

6. The Obligors agree to indemnify and hold harmless the City, its agents and employees, and contractors, for all obligations asserted against or costs incurred by them associated with the release of contaminants associated with Thorium Residuals in the impacted rights-of-way or in other portions of the designated rights-of-way subsequently identified as containing Thorium Residuals.

7. Violation of the terms of this Agreement by the Obligors, or their successor(s) in interest, may be grounds for voidance of this Agreement.

8. No violation of a permit by a third party shall constitute a breach of this Agreement by the City. The Obligors also agree that their personnel, if any, at the Site will exercise due diligence in notifying those accessing contaminated soil in the impacted rights-of-way of their rights and responsibilities under this Agreement.

9. Should the City breach this Agreement, the Obligors' sole remedy is for an action for damages in the Circuit Court of Cook County. Any and all claims for damages against the City, its agents, contractors, employees or its successors in interest arising at any time are limited to an aggregate maximum of $20,000.00. No other breach by the City, its agents, contractors, employees or its successors in interest of a provision of this Agreement is actionable in either law or equity by the Obligors against the City or them and the Obligors hereby release the City, its agents, contractors, employees and its successors in interest for any cause of action it may have against them, other than as allowed in this paragraph, arising under this Agreement or environmental laws, regulations or common law governing contaminated soil in the designated rights-of-way. Should the City convey, vacate or transfer jurisdiction of the designated rights-of-way, the Obligors may pursue an action under this Agreement, not limited in amount, against the successors in interest, other than the City, or any of its departments, or State agency, in a Court of Law.

10. The City will limit access to the rights-of-way as follows:

    a. Normal Access: The City will limit access to designated rights-of-way via the City Department of Transportation ("CDOT"), or its successor entity. Pursuant to §§10-20-100 and 10-20-150 of the Municipal Code of Chicago, a permit must be

issued by CDOT to any party, including the City, requesting to perform subsurface work in a City right-of-way. CDOT maintains and will maintain a permit database which, in conjunction with the City Department of Environment ("DOE"), tracks City rights-of-way with reported subsurface contamination. CDOT will consult the database whenever a party requests such a permit. The CDOT permit database will indicate the reported contamination under the impacted rights-of-way and it will indicate that radiation surveillance must be performed before and during excavations performed on other impacted rights-of-way subsequently identified as containing contaminants associated with Thorium Residuals through sampling and analysis. The permit database will also indicate that radiation surveillance must be performed during excavation or other work that disturbs or exposes the soil beneath the designated right-of-way. The CDOT database will direct the permit applicant to DOE to obtain detailed information on the nature and extent of the contamination and of the radiation surveillance requirements for any excavation near other impacted rights-of-way subsequently identified as containing contaminants associated with Thorium Residuals. After the permit applicant consults with DOE, the applicant must complete a form where the applicant acknowledges that it is aware of the contamination, will take appropriate steps to ensure the health and safety of people working in the impacted rights-of-way, and agrees to follow the health and safety plan for Thorium Residuals for these rights-of-way ("Health and Safety Plan"), attached as Attachment F, or other plan reviewed by USEPA that provides equal or greater health and safety protections, and to dispose of Thorium Residuals as required by law. DOE will provide written notice to River East, Kerr-McGee and USEPA at the time permit applicants contact DOE about the designated rights-of-ways and the radiation surveillance requirements.

b. Emergency Access: The City Board of Underground ("BOU"), the City Department of Buildings, and the Chicago Fire Department, or their successor entities, will be notified of the contamination at the impacted rights-of-way and will be forwarded copies of all available environmental data regarding the impacted rights-of-way, including the Health and Safety Plan. BOU will provide this information to all utilities in the area. In the event of an emergency that occurs outside of CDOT business hours, this will enable utilities to provide their personnel with the appropriate information to ensure that proper health and safety precautions are taken.

11. The City will place and maintain placards in any underground access in the rights-of-way that state "Before Work, Contact Chicago Department of Transportation."

12. Notice for purposes of this Agreement should go to the following:

City of Chicago:
Commissioner
Department of Environment
30 N. LaSalle Street
25th Floor
Chicago, IL 60602
312/744-7606

River East LLC
contact Kevin Augustyn
Randy Grueb
Charles Langenfeld
455 East Illinois
Suite 565
Chicago, IL 60611
Telephone: 312/321-8900
Facsimile: 312/755-2750

and:

Vincent S. Oleszkiewicz
counsel for River East LLC/MCL Companies
Baker & McKenzie
130 East Randolph Drive
Chicago, IL 60601
Telephone: 312/861-3737
Facsimile: 312/861-2899

Kerr-McGee
contact: Dan White
Kerr-McGee Center
Oklahoma City, OK 73125
Telephone: 405/270-3792
Facsimile: 405/270-3787

and:

Richard Meserve
counsel for Kerr-McGee
Covington & Burling
1201 Pennsylvania Ave., N.W.

Washington, D.C. 20044
Telephone: 202/662-5304
Facsimile: 202/662-6291

U.S. EPA Region 5
Lindsay Light II Site, Office of Regional Counsel
contact: Mary Fulghum
77 West Jackson Boulevard
Chicago, IL 60604-3590
Telephone: 312/886-4683
Facsimile: 312/886-0747

13. Obligors, and any of their successor(s) by merger or reorganization pursuant to paragraph 1 of this Agreement, shall, at least 15 days prior to such subsequent merger or reorganization, give written notice and a copy of this Agreement to subsequent successor entity(ies), and provide written notice thereof to the City. The notice to the City shall include the name and address of the successor entity(ies).

14. If any provision of this Agreement is determined to exceed the authority of the City, or if any provision of this Agreement is declared null and void or unenforceable by any court or tribunal having jurisdiction, then this Agreement shall be null and void. If this Agreement is declared null and void, the information about the contamination will remain in the CDOT database and all permit applicants will be required to consult with DOE as described above. Similarly, the Emergency Access procedures described above will remain in force if the Agreement is declared null and void.

15. This Agreement shall continue in effect from the date of the Agreement until the Thorium Residuals in the soil are subsequently reduced through active remediation to levels approved by USEPA, such that unrestricted access to the impacted rights-of-way or other portions of the designated rights-of-way subsequently identified as containing contaminants associated with Thorium Residuals is demonstrated to be appropriate and there is no longer a need for this Agreement, and USEPA has, upon written request to the USEPA and notice to the City, provided a written determination authorizing unencumbered access to the impacted rights-of way.

16. Nothing in this Agreement shall be deemed to create any right or obligation in any person not a party hereto and this Agreement shall not be construed in any respect to be a contract in whole or in part for the benefit of any third party nor an admission of any fact, condition or obligation by or for the benefit of any third party, nor shall any statement herein be considered an admission of fact for any purpose or use outside this Agreement. Nothing in this Agreement shall preclude the City, Kerr-McGee or River East from petitioning U.S. EPA for a relaxation of the Cleanup Criteria, if circumstances so warrant.

IN WITNESS WHEREOF, the City of Chicago caused this Agreement to be signed by its duly authorized representative:

BY:_____ Date:_____
Commissioner
Department of Environment
City of Chicago

IN WITNESS WHEREOF, River East, L.L.C. has caused this Agreement to be signed by its duly authorized representative:

River East, L.L.C.
By: River East, L.L.C.
Its: Sole Member
By: River East, L.L.C.
Its: Manager

By: _____
Its: _____

IN WITNESS WHEREOF, Kerr McGee Chemical L.L.C. has caused this Agreement to be signed by its duly authorized representative:

BY:_____ Date: 09/24/99
George D. Christiansen
Vice President

IN WITNESS WHEREOF, the City of Chicago caused this Agreement to be signed by its duly authorized representative:

BY:_____ Date:_____
Commissioner
Department of Environment
City of Chicago

IN WITNESS WHEREOF, River East, L.L.C. has caused this Agreement to be signed by its duly authorized representative:

River East, L.L.C.
By: River East, ~~L.L.C.~~ Inc.
Its: ~~Sole Member~~
~~By: River East, L.L.C.~~
Its: Manager

By: David McLean 9/27/99
Its: Manager

IN WITNESS WHEREOF, Kerr McGee Chemical L.L.C. has caused this Agreement to be signed by its duly authorized representative:

BY:_____ Date:_____

IN WITNESS WHEREOF, the City of Chicago caused this Agreement to be signed by its duly authorized representative:

BY: _____ Date: 9/24/99

Commissioner
Department of Environment
City of Chicago

IN WITNESS WHEREOF, River East, L.L.C. has caused this Agreement to be signed by its duly authorized representative:

River East, L.L.C.
By: River East, L.L.C.
Its: Sole Member
By: River East, L.L.C.
Its: Manager

By: _____
Its: _____

IN WITNESS WHEREOF, Kerr McGee Chemical L.L.C. has caused this Agreement to be signed by its duly authorized representative:

BY: _____ Date: _____

ATTACHMENTS

A- [Intentionally Omitted]

B- AOC

C- UAO

D- Designated rights-of-way

E- Impacted rights-of-way

F- Health & Safety Plan

ATTACHMENT A

[Intentionally Omitted]

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

IN THE MATTER OF:	)	Docket No. V-W-'94-C-223
	)	
Lindsay Light II Site	)	ADMINISTRATIVE ORDER BY
316 East Illinois Street	)	CONSENT PURSUANT TO
Chicago, Illinois	)	SECTION 106 OF THE
	)	COMPREHENSIVE
	)	ENVIRONMENTAL RESPONSE,
Respondent:	)	COMPENSATION AND
	)	LIABILITY ACT OF 1980,
The Chicago Dock & Canal Trust	)	as amended, 42 U.S.C.
	)	Section 9606(a)

PREAMBLE

The United States Environmental Protection Agency (U.S. EPA) and the Respondent have each agreed to the making and entry of this Order by Consent.

It is issued pursuant to the authority vested in the President of the United States by Sections 106(a) and 122 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. Section 9606(a), as amended by the Superfund Amendments and Reauthorization Act of 1986, Pub. L. 99-499 (CERCLA), and delegated to the Administrator of the U.S. EPA by Executive Order No. 12580, January 23, 1987, 52 Federal Register 2923, and further delegated to the Assistant Administrator for Solid Waste and Emergency Response and the Regional Administrators by U.S. EPA Delegation Nos. 14-14, 14-14-C and 14-14-D, and to the Director, Waste Management Division, Region V, by Regional Delegation Nos. 14-14-A, 14-14-C and 14-14-D.

A copy of this Order will also be provided to the State of Illinois, which has been notified of the issuance of this Order as required by Section 106(a) of CERCLA, 42 U.S.C. Section 9606(a).

This Order requires the Respondent to undertake and complete emergency investigation and sampling activities to abate conditions which may present an imminent and substantial endangerment to the public health or welfare or the environment because of an actual or threatened release of hazardous substances at the Site.

FINDINGS

Based on available information, including the Administrative Record in this matter, U.S. EPA hereby finds:

1. The Lindsay Light II Site ("the Site" or "the Facility") is located at 316 East Illinois Street, Chicago, Cook County, Illinois. The Site is situated in a urban area called the Gold Coast, and is surrounded by commercial and residential buildings. A shopping mall is located approximately 200 feet to the southeast. The Chicago River is located 1 mile south of the Site and Lake Michigan is about 1.5 miles east of the Site.

2. The Site is currently a parking lot operated by General Parking and owned by The Chicago Dock and Canal Trust.

3. Until 1936, Lindsay Light manufactured incandescent gas mantels at 161 East Grand, which is .25 miles from the Site. It is unknown if they worked elsewhere; however, Sanborn maps from 1906 do show Lindsay Light being at other Chicago locations. During 1931-1936, the company moved its operations to West Chicago, Illinois.

4. The principle ingredient in gas mantle manufacture is thorium as a nitrate. Small amounts of cerium, beryllium and magnesium nitrates are also used. Thorium occurs principally as the parent radionuclide thorium-232 in association with its daughter products in a decay sequence known as the Thorium Decay Series. Thorium radionuclides are also found in the Uranium Decay Series and the Actinium Decay Series. It is believed that the principal source of contamination at this Site is the Thorium Decay Series.

5. It is unclear what Lindsay Light actually did at 316 East Illinois; however, records from The Chicago Dock and Canal Trust indicate this Site was a stable, and that Lindsay Light leased portions of the building from The Chicago Dock and Canal Trust from 1915-1933.

6. On June 3, 1993, U.S. EPA and the Illinois Department of Nuclear Safety conducted a joint investigation at the Site. This investigation verified the presence of radioactivity at levels clearly above natural background. Gamma readings were found as high as 280 uR/hr on a Ludlum Model 19 Micro-R meter. Background measured at the Site had gamma readings of 20 uR/hr.

DETERMINATIONS

Based on the foregoing Findings, U.S. EPA has determined that:

1. The Lindsay Light II Site is a "facility" as defined by Section 101(9) of CERCLA, 42 U.S.C. Section 9601(9).

2. The Chicago Dock & Canal Trust is a "person" as defined by Section 101(21) of CERCLA, 42 U.S.C. Section 9601(21).

4. Radionuclides are "hazardous substances" as defined by Section 101(14) of CERCLA, 42 U.S.C. Section 9601(14).

5. The detection of gamma rays as high as 280 uR/hr constitutes an actual or threatened "release" as that term is defined in Section 101(22) of CERCLA, 42 U.S.C. Section 9601(22).

6. The actual or threatened release of hazardous substances from the Facility may present an imminent and substantial endangerment to the public health, welfare, or the environment.

7. The actions required by this Order, if properly performed, are consistent with the National Contingency Plan (NCP), 40 CFR Part 300, as amended, and CERCLA; and are reasonable and necessary to protect the public health, welfare and the environment because of the following factors:

a. **actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, pollutants or contaminants;**

This factor is present at the Facility due to the existence of a public parking lot on property found to have gamma readings measured as high as 280 microroentgen per hour (uR/hr) on a Ludlum Model 19 Micro-R meter. Gamma rays are penetrating radiations indistinguishable from X-rays which can be absorbed by tissue in the human body. Furthermore, there are two parking attendants stationed at this parking lot on a 24-hour basis to collect fees, although initial readings taken on June 3, 1993, indicate that there were no levels above background where the attendants are stationed. U.S. EPA is monitoring the area to determine the potential dose. The Site is also surrounded by commercial and residential buildings, whose occupants use this parking lot and adjacent sidewalks. Situated 200 feet southeast of the Site is the North Pier shopping mall.

b. **high levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;**

This factor is present at the Facility due to the existence of elevated gamma levels as high as 280 uR/hr on a Ludlum Model 19 Micro-R meter, as compared to 20 uR/hr for background as measured at the Site. These gamma levels may indicate higher levels in the soils because the parking lot is covered with asphalt and/or concrete, which attenuates radiation.

c. other situations or factors which may pose threats to public health or welfare or the environment.

This factor is present at the Facility due to the property's potential for future development. Such construction might entail excavating into potentially contaminated soils for placement of building footings and cause increased releases into the environment and human exposure to contaminants.

ORDER

Based upon the foregoing Findings and Determinations, and pursuant to Section 106(a) of CERCLA, 42 U.S.C. Section 9606(a), it is hereby ordered and agreed that Respondent will undertake the following actions at the Facility:

1. Within sixty (60) calendar days after the effective date of this Order, the Respondent shall submit to U.S. EPA for approval, a Work Plan for the investigation and sampling activities ordered as set forth in Paragraph 4 below. The Work Plan shall provide a concise description of the activities to be conducted to comply with the requirements of this Order. The Work Plan shall be reviewed by U.S. EPA, which may approve, disapprove, require revisions, or modify the Work Plan. Respondent shall implement the Work Plan as finally approved by U.S. EPA, including any modifications. Once approved, the Work Plan shall be deemed to be incorporated into and made a fully enforceable part of this Order.

2. The Work Plan shall contain a site safety and health plan, a sampling and analysis plan, and a schedule of the work to be performed. The site safety and health plan shall be prepared in accordance with the Occupational Safety and Health Administration (OSHA) regulations applicable to Hazardous Waste Operations and Emergency Response, 29 CFR Part 1910, and with Illinois Department of Nuclear Safety (IDNS) regulations pertaining to radiation workers, non-radiation workers, and the general public, 32 Illinois Administrative Code Part 340. The Work Plan and other submitted documents shall demonstrate that the Respondent can properly conduct the actions required by this Order.

3. Respondent shall retain a contractor qualified to undertake and complete the requirements of this Order, and shall notify U.S. EPA of the name of such contractor within five (5) business days of the effective date of this Order. U.S. EPA retains the right to disapprove of any, or all, of the contractors and/or subcontractors retained by the Respondent. In the event U.S. EPA disapproves of a selected contractor, Respondent shall retain a different contractor to perform the work, and such selection shall be made within two (2) business days following U.S. EPA's disapproval.

4. Within thirty (30) calendar days after U.S. EPA approval of the Work Plan, Respondent shall commence implementation of the Work Plan as approved or modified by U.S. EPA. Failure of the Respondent to properly implement all aspects of the Work Plan shall be deemed to be a violation of the terms of this Order. The Work Plan shall require the Respondent to perform, and complete within one hundred fifty (150) calendar days after approval, the following investigation and sampling activities:

a. Develop and implement a Site Health and Safety Plan.

b. Conduct land surveying to the extent necessary to locate all property boundaries and features, sample locations and areas having elevated radiation levels.

c. Place borings in several locations for the purpose of measuring subsurface radiation levels. Measurements shall be recorded until the natural soils are reached or radiation levels reach background, whichever is the greatest depth.

d. Collect soil samples from the borings and analyze for radionuclide content and RCRA characteristics. These results will then be used by the Respondent to correlate subsurface radiation levels and radionuclide content.

5. All materials removed from the Site shall be disposed of or treated at a facility approved by the On-Scene Coordinator and in accordance with the Resource Conservation and Recovery Act of 1976 (RCRA), 42 U.S.C. Section 6901, et seq., as amended, the U.S. EPA Revised Off-Site Policy, and all other applicable Federal, State, and local requirements.

6. On or before the effective date of this Order, the Respondent shall designate a Project Coordinator. The U.S. EPA has designated Verneta Simon, of the Emergency and Enforcement Response Branch, Response Section III, as its On-Scene Coordinator. The On-Scene Coordinator and the Project Coordinator shall be responsible for overseeing the implementation of this Order. To the maximum extent possible, communication between the Respondent and the U.S. EPA, and all documents, reports and approvals, and all other correspondence concerning the activities relevant to this Order, shall be directed through the On-Scene Coordinator and the Project Coordinator. During implementation of the Work Plan, the OSC and the Project Coordinator shall, whenever possible, operate by consensus, and shall attempt in good faith to resolve disputes informally through discussion of the issues.

7. The U.S. EPA and the Respondent shall each have the right to change their respective designated On-Scene Coordinator or Project Coordinator. U.S. EPA shall notify the Respondent, and

Respondent shall notify U.S. EPA, as early as possible before such a change is made. Notification may initially be verbal, but shall promptly be reduced to writing.

8. The U.S. EPA On-Scene Coordinator shall have the authority vested in an On-Scene Coordinator by the NCP, 40 CFR Part 300, as amended, including the authority to halt, conduct, or direct any work required by this Order, or to direct any other response action undertaken by U.S. EPA or the Respondent at the facility.

9. No extensions to the time frames in this Order shall be granted without sufficient cause. All extensions must be requested, in writing, and shall not be deemed accepted unless approved, in writing, by U.S. EPA.

10. This Order and all instructions by the U.S. EPA On-Scene Coordinator or designated alternate that are consistent with the National Contingency Plan and this Order shall be binding upon the Respondent, and the employees, agents, contractors, successors and assigns of the Respondent.

11. To the extent that the Facility or other areas where work under this Order is to be performed is owned by, or in possession of, someone other than the Respondent, Respondent shall attempt to obtain all necessary access agreements. In the event that after using it's best efforts the Respondent is unable to obtain such agreements, Respondent shall immediately notify U.S. EPA and U.S. EPA may then assist Respondent in gaining access, to the extent necessary to effectuate the response activities described herein, using such means as it deems appropriate.

12. Respondent shall provide access to the Facility to U.S. EPA employees, and U.S. EPA-authorized contractors, agents, and consultants at any time, and shall permit such persons to be present and move freely in the area in order to conduct inspections, including taking photographs and videotapes of the Facility, to do cleanup/stabilization work, to take samples, to monitor the work under this Order, and to conduct other activities which the U.S. EPA determines to be necessary.

13. This Order shall be effective on the date of signature by the Director, Waste Management Division.

14. Respondent shall provide a written monthly progress report to the On-Scene Coordinator regarding the actions and activities undertaken under this Order. At a minimum, these progress reports shall describe the actions that have been taken to comply with this Order, including all results of sampling and tests received or prepared by the Respondent and shall describe all significant work items planned for the next month.

15. Respondent agrees to retain for six years following completion of the activities required by this Order copies of all records, files and data relating to hazardous substances found on the Site, or related to the activities undertaken pursuant to this Order, whether or not those documents were created pursuant to this Order. Respondent shall acquire and retain copies of all documents relating to the Site that are in the possession of its contractors, agents and employees. Respondent shall notify U.S. EPA at least sixty (60) calendar days before any documents retained under this paragraph are to be destroyed. The documents retained under this paragraph shall be made available to the U.S. EPA upon request.

16. The United States reserves its right to seek reimbursement from the Respondent of all past costs and oversight costs it incurs with regards to the Lindsay Light II Site that are not inconsistent with the National Contingency Plan. Nothing in this Order shall be construed as a waiver of that right.

17. A notice, document, information, report, plan, approval, disapproval or other correspondence required to be submitted from one party to another under the Order shall be deemed submitted either when hand delivered or as of the date of receipt by certified mail, return receipt requested.

Submissions to the Respondent shall be submitted to:

The Chicago Dock & Canal Trust
c/o Mr. Charles Gardner, President
455 East Illinois Street
Suite 565
Chicago, Illinois 60611

Submissions to the U.S. EPA shall be submitted to:

Verneta Simon
On-Scene Coordinator
U.S. Environmental Protection Agency
77 West Jackson Boulevard, HSE-5J
Chicago, Illinois 60604

18. If any provision of this Order is deemed invalid or unenforceable, the remainder of this Order shall remain in full force and effect.

STIPULATED PENALTIES

19. For each day the Respondent fails to meet the deadlines set forth in the Consent Order and Work Plan, Respondent shall be liable as follows:

	Penalty For: First Week or Part Thereof	Each Following Week or Part Thereof
Failure to Submit the Work Plan, Site Safety and Health Plan, Sampling and Analysis Plan or the Schedule of Work to be Performed	$1,000	$1,750
Failure to Commence Implementation of the Work Plan	$1,000	$1,750
Failure to Meet any Scheduled Deadline in the Work Plan	$1,000	$1,750
Failure to Submit Monthly Reports	$ 250	$ 400

20. All penalties which accrue pursuant to the requirements of this Order shall be paid within fifteen (15) business days of written demand by U.S. EPA. Payment shall be made to the EPA Hazardous Substances Superfund delivered to the U.S. EPA, Attn: Superfund Accounting, P.O. Box 70753, Chicago, Illinois 60673, in the form of a certified or cashier's check payable to "EPA Hazardous Substances Superfund." The face of the check should note that the payment is for the Lindsay Light II Site.

21. Pursuant to 31 U.S.C. Section 3717, interest shall accrue on any amount of overdue stipulated penalties at a rate established by the United States Treasury. Stipulated penalties shall accrue, but need not be paid, during any dispute resolution period concerning the particular penalties at issue. If Respondent prevails upon resolution, Respondent shall pay only such penalties as the resolution requires.

22. Payment of Stipulated Penalties will not relieve Respondent from complying with the terms of this Consent Order. U.S. EPA retains the right to seek any remedies or sanctions available to U.S. EPA by reason of Respondent's noncompliance with the provisions of this Consent Order that are not otherwise expressly limited by these Stipulated Penalty provisions.

PENALTIES FOR NONCOMPLIANCE

23. Respondent is advised pursuant to Section 106(b) of CERCLA, 42 U.S.C. Section 9606(b), that violation or subsequent failure or refusal to comply with this Order and any Work Plan approved under this Order, or any portion thereof, may subject the Respondent to a civil penalty of no more than $25,000 per day for each day in which such violation occurs, or such failure to comply continues. In addition, failure to properly provide investigation and sampling actions upon the terms of this order, or other subsequent orders issued by U.S. EPA, may result in liability for punitive damages pursuant to Section 107(c)(3) of CERCLA, 42 U.S.C Section 9607(c)(3).

TERMINATION AND SATISFACTION

24. The Respondent shall submit a final report summarizing the actions taken to comply with this Order. The report shall contain, at a minimum: identification of the facility, a description of the locations and types of hazardous substances encountered at the facility upon the initiation of work performed under this Order, a chronology and description of the actions performed (including both the organization and implementation of response activities), a listing of the resources committed to perform the work under this Order (including financial, personnel, mechanical and technological resources), identification of all items that affected the actions performed under the Order and discussion of how all problems were resolved, a listing of quantities and types of materials removed, a discussion of removal and disposal options considered for those materials, a listing of the ultimate destination of those materials, and a presentation of the analytical results of all sampling and analyses performed and accompanying appendices containing all relevant paperwork accrued during the action (e.g., manifests, invoices, bills, contracts, permits). The final report shall also include an affidavit from a person who supervised or directed the preparation of that report. The affidavit shall certify under penalty of law that based on personal knowledge and appropriate inquiries of all other persons involved in preparation of the report, the information submitted is true, accurate and complete to the best of the affiant's knowledge and belief. The report shall be submitted within sixty (60) calendar days of completion of the work required by the U.S. EPA.

25. The provisions of this Order shall be deemed satisfied upon payment by Respondent of all sums due under the terms of this Order and upon the Respondent's receipt of written notice from U.S. EPA that the Respondent has demonstrated, to the satisfaction of U.S. EPA, that all of the terms of this Order,

including any additional tasks consistent with this Consent Order which U.S. EPA has determined to be necessary, have been completed.

INDEMNIFICATION

26. The Respondent agrees to indemnify and save and hold harmless the United States Government, its agencies, departments, agents, and employees, from any and all claims or causes of action arising from, or on account of, acts or omissions of the Respondent, its officers, employees, receivers, trustees, agents, successors or assigns, in carrying out the activities pursuant to this Order. The United States Government shall not be held as a party to any contract entered into by the Respondent in carrying out activities under this Order.

RESERVATION OF RIGHTS

27. This Order is not intended for the benefit of any third party and may not be enforced by any third party.

28. The U.S. EPA and the Respondent reserve all rights, claims, demands, and defenses, including defenses and denials of and to all determinations and findings, that they may have as to each other except as otherwise provided in this Order pursuant to any available legal authority. Nothing in this Order shall expand the Respondent's ability to obtain preenforcement review of U.S. EPA actions. Notwithstanding any reservation of rights, Respondent agrees to comply with the terms and conditions of this Order and consents to the jurisdiction of the U.S. EPA to enter into and enforce this Order.

29. Nothing herein is intended to release, discharge, limit or in any way affect any claim, causes of action or demands in law or equity which the parties may have against any persons, firm, trust, joint venture, partnership, corporation, or other entity not a party to this Order for any liability it may have arising out of, or relating in any way to, the generation, storage, treatment, handling, transportation, disposal, release or threat of release of any hazardous substance, hazardous waste, contaminant or pollutant at or from the Site. The parties to this Order hereby expressly reserve all rights, claims, demands and causes of action they may have against any and all other persons and entities who are not parties to this Order.

30. Nothing herein shall be construed: 1) to prevent U.S. EPA from exercising its right to disapprove of work performed by the Respondent; 2) to prevent U.S. EPA from seeking legal or equitable relief to enforce the terms of this order; 3) to prevent U.S. EPA from taking other legal or equitable action not

inconsistent with the Covenant Not To Sue in Paragraphs 41 through 43 of this Order; 4) to prevent U.S. EPA from requiring the Respondent in the future to perform additional activities pursuant to CERCLA, 42 U.S.C. Section 9601 et seq., or any other applicable law; or 5) to prevent U.S. EPA from undertaking response actions at the Site.

FORCE MAJEURE

31. The Respondent shall cause all work to be performed within the time limits set forth herein and in the approved Work Plan, unless performance is delayed by "force majeure". For purposes of this Order, "force majeure" shall mean an event arising from causes entirely beyond the control of the Respondent and its contractors which delays or prevents the performance of any obligation required by this Order. Increases in costs, financial difficulty, and normal inclement weather are examples of events that are not considered to be beyond the control of the Respondent.

32. Respondent shall notify the OSC within 24 hours after Respondent becomes aware of any event which Respondent contends constitutes a force majeure, with subsequent written notice within seven (7) calendar days of the event. Such written notice shall describe: 1) the nature of the delay, 2) the cause of the delay, 3) the expected duration of the delay, including any demobilization and remobilization resulting from the delay, 4) the actions which will be taken to prevent or mitigate further delay, and 5) the timetable by which the actions to mitigate the delay will be taken. Respondent shall implement all reasonable measures to avoid and/or minimize such delays. Failure to comply with the notice provision of this paragraph shall be grounds for U.S. EPA to deny Respondent an extension of time for performance. The Respondent shall have the burden of demonstrating by a preponderance of the evidence that the event is a force majeure, that the delay is warranted under the circumstances, and that best efforts were exercised to avoid and mitigate the effects of the delay. If U.S. EPA determines a delay is or was attributable to a force majeure, the time period for performance under this Order shall be extended as deemed necessary by the OSC to allow performance.

DISPUTE RESOLUTION

33. The Parties to this Order on Consent shall attempt to resolve expeditiously and informally any disagreements concerning implementation of this Order on Consent or any work required hereunder.

34. In the event that any dispute arising under this Order on Consent is not resolved expeditiously through informal means, any party desiring dispute resolution under this Section shall give prompt written notice to the other parties to the Order.

35. Within ten (10) calendar days of the service of notice of dispute pursuant to Paragraph 34 above, the party who gave notice shall serve on the other parties to this Order a written statement of the issues in dispute, the relevant facts upon which the dispute is based, and factual data, analysis or opinion supporting its position, and all supporting documentation on which such party relies (hereinafter the "Statement of Position"). The opposing parties shall serve their Statement of Position, including supporting documentation, no later than ten (10) calendar days after receipt of the complaining party's Statement of Position. In the event that these 10-day time periods for exchange of Statements of Position may cause a delay in the work, they shall be shortened upon and in accordance with notice by U.S. EPA.

36. An administrative record of any dispute under this Section shall be maintained by U.S. EPA. The record shall include the written notification of such dispute, and the Statements of Position served pursuant to the preceding paragraphs.

37. Upon review of the administrative record, the Director of the Waste Management Division, U.S. EPA, Region V, shall resolve the dispute consistent with the NCP and the terms of this Order.

NON-ADMISSION

38. The consent of the Respondent to the terms of this Order shall not constitute or be construed as an admission of liability or of U.S. EPA's findings or determinations contained in this Order in any proceeding other than a proceeding to enforce the terms of this Order.

CERCLA FUNDING

39. The Respondent waives any claims or demands for compensation or payment under Sections 106(b), 111 and 112 of CERCLA against the United States or the Hazardous Substance Superfund established by 26 U.S.C. §9507 for, or arising out of, any activity performed or expenses incurred pursuant to this Consent Order.

40. This Consent Order does not constitute any decision on preauthorization of funds under Section 111(a)(2) of CERCLA.

COVENANT NOT TO SUE

41. Upon termination and satisfaction of this Administrative Order pursuant to its terms, for and in consideration of the complete and timely performance by Respondent of the obligations agreed to in this Order, U.S. EPA hereby covenants not to sue Respondent for judicial imposition of damages or civil penalties for any failure to perform obligations agreed to in this Order except as otherwise reserved herein.

42. Performance of the terms of this Order resolves and satisfies the liability of the Respondent to U.S. EPA for work satisfactorily performed under this Order. U.S. EPA recognizes that, pursuant to Section 113 of CERCLA, the Respondent, upon having resolved it's liability with the U.S. EPA for the matters expressly covered by this Order, shall not be liable for claims for contribution regarding matters addressed in this Order. Nothing in this Order precludes the Respondent from asserting any claims, causes of action or demands against potentially responsible parties (PRPs) who are not parties to this Order for indemnification, contribution, or cost recovery.

43. In consideration of the actions to be performed by the Respondent under this Order, the U.S. EPA covenants not to sue the Respondent, its successors or assigns for any and all claims which are available to the U.S. as against the Respondent under Sections 106 and 107 of CERCLA concerning all matters satisfactorily performed.

SUBSEQUENT AMENDMENT

44. This Consent Order may be amended by mutual agreement of U.S. EPA and the Respondent. Any amendment of this Consent Order shall be in writing, signed by U.S. EPA and the Respondent and shall have as the effective date, that date on which such amendment is signed by U.S. EPA.

LINDSAY LIGHT II SITE
CHICAGO, ILLINOIS

SIGNATORIES

Each undersigned representative of a signatory to this Administrative Order on Consent certifies that he or she is fully authorized to enter into the terms and conditions of this Order and to bind such signatory, its directors, officers, employees, agents, successors and assigns, to this document.

Agreed this 10th day of January, 1994.

By _____ President
The Chicago Dock & Canal Trust

The above being agreed and consented to, it is so ORDERED this 27th day of January, 1994.

By _____
William E. Muno, Director
Waste Management Division
U.S. Environmental Protection Agency
Region V, Complainant

bcc: Docket Analyst, ORC (CS-3T)
Marc Radell, ORC (CS-3T)
Verneta Simon, OSC (HSE-5J)
Debbie Regel, ESS (HSE-5J)
Jose Cisneros, ESS (HSE-5J)
Mary Ellen Ryan, SFAS (MF-10J)
Oliver Warnsley, CRS (HSM-5J)
EERB Site File
EERB Read File
Toni Lesser, Public Affairs (P-19J) w/out attachments
Sheila Huff, Department of Interior
Larry Jensen, ARD (AT-18J)

STATE SUPERFUND COORDINATORS:

Illinois:

Gary King, Deputy Manager
Division of Land Pollution Control
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, Illinois 62706

Minnesota:

James L. Warner, Chief
Groundwater and Solid Waste Division
Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, Minnesota 55155

Indiana:

Greta J. Hawvermale
Assistant Commissioner for Environmental Response
Indiana Department of Environmental Management
P.O. Box 6015, Room 1255N
Indianapolis, Indiana 46206-6015

Ohio:

Janice A. Carlson
Acting Chief
Division of Emergency & Remedial Response
Ohio Environmental Protection Agency
1800 WaterMark Drive
Columbus, Ohio 43266-0149

Michigan:

Alan Howard, Chief
Environmental Response Division
Michigan Department of Natural Resources
Stevens T. Mason Building
P.O. Box 30028
Lansing, Michigan 48909

Wisconsin:

Paul P. Didier, Director
Wisconsin Department of Natural Resources
P.O. Box 7921
101 South Webster Street
Madison, Wisconsin 53707

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 5

IN THE MATTER OF:	)	Docket No. V-W-'96-C-35
	)	
Lindsay Light II Site Chicago, Illinois	)	ADMINISTRATIVE ORDER PURSUANT TO SECTION 106(a) OF THE COMPREHENSIVE ENVIRONMENTAL RESPONSE,
Respondents:	)	COMPENSATION, AND LIABILITY ACT OF 1980,
The Chicago Dock & Canal Trust Kerr-McGee Chemical Corporation	)	AS AMENDED, 42 U.S.C. SECTION 9606(a)

I. JURISDICTION AND GENERAL PROVISIONS

This Order is issued pursuant to the authority vested in the President of the United States by Section 106(a) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended ("CERCLA"), 42 U.S.C. § 9606(a), and delegated to the Administrator of the United States Environmental Protection Agency ("U.S. EPA") by Executive Order No. 12580, January 23, 1987, 52 Federal Register 2923, and further delegated to the Regional Administrators by U.S. EPA Delegation Nos. 14-14-A and 14-14-B, and to the Director, Superfund Division, Region 5, by Regional Delegation Nos. 14-14-A and 14-14-B.

This Order pertains to property located at 316 East Illinois Street, Chicago, Illinois (the "Lindsay Light II Site" or the "Site"). This Order requires the Respondents to conduct removal activities described herein to abate an imminent and substantial endangerment to the public health, welfare or the environment that may be presented by the actual or threatened release of hazardous substances at or from the Site.

U.S. EPA has notified the State of Illinois of this action pursuant to Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).

II. PARTIES BOUND

This Order applies to and is binding upon Respondents and Respondents' heirs, receivers, trustees, successors and assigns. Any change in ownership or corporate status of Respondents including, but not limited to, any transfer of assets or real or personal property shall not alter such Respondents' responsibilities under this Order. Respondents are jointly and severally liable for carrying out all activities required by this Order. Compliance or noncompliance by one or more Respondent with any provision of this Order shall not excuse or justify noncompliance by any other Respondent.

Respondents shall ensure that their contractors, subcontractors, and representatives comply with this Order. Respondents shall be responsible for any noncompliance.

III. FINDINGS OF FACT

Based on available information, including the Administrative Record in this matter, U.S. EPA hereby finds that:

1. The Lindsay Light II Site ("the Site" or "the Facility") is located at 316 East Illinois Street, Chicago, Cook County, Illinois. The Site is situated in an urban area called the Gold Coast, and is surrounded by commercial and residential buildings. A shopping mall is located approximately 200 feet to the southeast. The Chicago River is located 1 mile south of the Site, and Lake Michigan is about 1.5 miles east of the Site.

2. The Site is currently a parking lot operated by General Parking, and owned by the Chicago Dock and Canal Trust ("CDCT").

3. Until 1936, Lindsay Light manufactured incandescent gas mantels at 161 East Grand, which is .25 miles from the Site. It is unknown if they worked elsewhere; however, Sanborn maps from 1906 do show Lindsay Light being at other Chicago locations. During 1931-1936, the company moved its operations to West Chicago, Illinois.

4. The principal ingredient in gas mantle manufacture is thorium as a nitrate. Small amounts of cerium, beryllium and magnesium nitrates are also used. Thorium occurs principally as the parent radionuclide thorium-232 in association with its daughter products in a decay sequence known as the Thorium Decay Series. Thorium radionuclides are also found in the Uranium Decay Series and the Actinium Decay Series. It is believed that the principal source of contamination at this Site is the Thorium Decay Series.

5. It is unclear what Lindsay Light actually did at 316 East Illinois; however, records from The Chicago Dock and Canal Trust indicate this Site was a stable, and that Lindsay Light leased portions of the building from The Chicago Dock and Canal Trust from 1915-1933.

6. On June 3, 1993, U.S. EPA and the Illinois Department of Nuclear Safety conducted a joint investigation at the Site. This investigation verified the presence of radioactivity at levels clearly above natural background. Gamma readings were found as high as 280 uR/hr on a Ludlum Model 19 Micro-R meter. Background measured at the Site had gamma readings of 20 uR/hr.

7. The Chicago Dock and Canal Trust entered into an Administrative Order by Consent ("AOC") with U.S. EPA to study the extent of subsurface radiation and radionuclide content before excavation. The AOC was signed by U.S. EPA on January 27, 1994, and the extent of contamination ("EOC") study was completed by CDCT in May 1994. The final report concerning the extent of contamination was delivered to U.S. EPA on October 17, 1995, and was approved on March 13, 1996.

8. A brief summary of the final report approved by U.S. EPA on March 13, 1996, is as follows: 12 areas exhibit elevated gamma levels; the maximum contamination depth extends to 2.5 meters (8 feet) below the ground surface; and Resource Conservation and Recovery Act ("RCRA")-characteristic waste is not present on-site. The highest gamma level is 252 times above background, or 1.1 milliRoentgen per hour.

9. Activities completed at this Site, besides the extent of contamination study, have been the voluntary placement by CDCT of notices at the entrances to the parking lot informing patrons of the risks associated with the lot.

IV. CONCLUSIONS OF LAW AND DETERMINATIONS

Based on the Findings of Fact set forth above, and the Administrative Record supporting these removal actions, U.S. EPA determines that:

1. The Lindsay Light II Site is a "facility" as defined by Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).

2. Radionuclides are "hazardous substances" as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).

3. Each Respondent is a "person" as defined by Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

4. Respondent The Chicago Dock & Canal Trust is the present "owner" and "operator" of the Lindsay Light II Site, as defined by Section 101(20) of CERCLA, 42 U.S.C. § 9601(20). Respondent Kerr-McGee Chemical Corporation is a person who is the corporate successor of the Lindsay Light Company. The Lindsay Light Company was the operator of the Lindsay Light II Site at the time of disposal of any hazardous substances, or who arranged for disposal or transport for disposal of hazardous substances at the Lindsay Light II Site. Respondents are therefore liable persons under Section 107(a) of CERCLA, 42 U.S.C. § 9607(a).

5. The conditions described in the Findings of Fact above constitute an actual or threatened "release" into the "environment" as defined by Sections 101(8) and (22) of CERCLA, 42 U.S.C. §§ 9601(8) and (22).

6. The conditions present at the Site constitute a threat to public health, welfare, or the environment based upon the factors set forth in Section 300.415(b)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan, as amended ("NCP"), 40 CFR Part 300. These factors include, but are not limited to, the following:

a. actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, pollutants or contaminants;

This factor is present at the Site due to the existence of a public parking lot on property found to have gamma readings measured as high as 1.1 milliRoentgen per hour. This reading is 252 times the background level measured for the Site.

Gamma rays are penetrating radiation indistinguishable from X-rays which can be absorbed by tissue in the human body, thereby increasing the cancer risk for the person exposed. The excess risk to a transient spending 29 minutes per day for a 250 day work year at the peak exposure spot is 10^{-4}. Transients were judged to be parking lot customers, people using the lot for a short cut, or temporary workers.

The Site is surrounded by two-foot high steel guardrails, which do not totally restrict access. Furthermore, there are two parking attendants stationed at this parking lot on a 24-hour basis to collect fees, although initial readings taken on June 3, 1993, indicate that there were no levels above background where the attendants are stationed. Again, such an exposure entails cancer risk that would have no personal or societal benefit. Direct measurement with survey instruments at the present parking lot attendant stations found background radiation levels which were confirmed with longer measurements using thermoluminescent dosimeters ("TLDs") placed in the ticket booths between June 3, 1993, and June 30, 1993. Conditions at the Site have not changed since the site assessment on June 3, 1993. There is no guarantee that the ticket booths could not be moved to the peak point of gamma readings at some future time, thereby introducing the potential for exposure and risk to be actualized.

The EOC study confirmed that elevated radioactivity levels are due to past industrial processes. The Site is also surrounded by commercial and residential buildings, whose occupants use this parking lot and adjacent sidewalks. Situated 200 feet southeast of the Site is the North Pier shopping mall.

b. high levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;

This factor is present at the Site due to the existence of elevated gamma exposure levels which validates subsurface deposits of radiological contaminants. The dominant concern is intrusion into these materials that will contaminate the intruder and their equipment and, further, lead to dispersal or spreading of the contaminants from their present locations. Such a scenario probably has arisen, and could again arise, with parking lot excavation where workers and their equipment are contaminated by radioactive soils, dry soil dispersed in the wind, and excavation spoils moved off-site. The number of people exposed could greatly increase and might include workers who subsequently use contaminated machinery, residents near the parking lot who might come in contact with wind dispersed soils, and use of excavation spoils. Such spreading could occur within downtown Chicago where the parking lot is located and out for several miles depending upon where workers reside and where spoils are used.

c. other situations or factors that may pose threats to public health or welfare or the environment;

This factor is present at the Site due to the property's planned future development. Such construction would entail excavating into potentially contaminated soils for placement of building footings and cause increased releases into the environment and human exposure to contaminants. Also, it has not been determined whether subsurface contaminants are soluble. If they are, there could be spreading via groundwater.

This Site appears to be gridded with sewer lines. These could be conduits for the spread of both soluble and insoluble materials off-site, for extension of the region of contamination, and for an increase in the potential for sewer workers to be exposed to contaminants.

7. The actual or threatened release of hazardous substances from the Site may present an imminent and substantial endangerment to the public health, welfare, or the environment within the meaning of Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).

8. The removal actions required by this Order are necessary to protect the public health, welfare, or the environment, and are not inconsistent with the NCP and CERCLA.

V. ORDER

Based upon the foregoing Findings of Fact, Conclusions of Law, Determinations, and the Administrative Record for this Site, U.S. EPA hereby orders that Respondents perform the following actions:

1. Notice of Intent to Comply

Respondents shall notify U.S. EPA in writing within 3 business days after the effective date of this Order of Respondents' irrevocable intent to comply with this Order. Failure of each Respondent to provide such notification within this time period shall be a violation of this Order.

2. Designation of Contractor, Project Coordinator, and On-Scene Coordinator

Respondents shall perform the removal actions themselves or retain contractors to implement the removal actions. Respondents shall notify U.S. EPA of Respondents' qualifications or the name and qualifications of such contractors, whichever is applicable, within 10 business days of the effective date of this Order. Respondents shall also notify U.S. EPA of the name and qualifications of any other contractors or subcontractors retained to perform work under this Order at least 5 business days prior to commencement of such work. U.S. EPA retains the right to disapprove of the Respondents or any of the contractors and/or subcontractors retained by the Respondents. If U.S. EPA disapproves a selected contractor, Respondents shall retain a different contractor within 2 business days following U.S. EPA's disapproval and shall notify U.S. EPA of that contractor's name and qualifications within 3 business days of U.S. EPA's disapproval.

Within 10 business days after the effective date of this Order, the Respondents shall designate a Project Coordinator who shall be responsible for administration of all the Respondents' actions required by the Order and submit the designated coordinator's name, address, telephone number, and qualifications to U.S. EPA. To the greatest extent possible, the Project Coordinator shall be present on-site or readily available during site work. U.S. EPA retains the right to disapprove of any Project Coordinator named by the Respondents. If U.S. EPA disapproves a selected Project Coordinator, Respondents shall retain a different Project Coordinator within 3 business days following U.S. EPA's disapproval and shall notify U.S. EPA of that person's name and qualifications within 4 business days of U.S. EPA's disapproval. Receipt by Respondents' Project Coordinator of any notice or communication from U.S. EPA relating to this Order shall constitute receipt by all Respondents.

The U.S. EPA has designated Verneta Simon of the Emergency Response Branch, Region 5, as its On-Scene Coordinator (OSC). Respondents shall direct all submissions required by this Order to the OSC at U.S. EPA, 77 West Jackson Boulevard, SE-5J, Chicago, Illinois, 60604-3590, by certified or express mail. Respondents shall also send a copy of all submissions to Nancy-Ellen Zusman, Assistant Regional Counsel, 77 West Jackson Boulevard, C-29A, Chicago, Illinois, 60604-3590. All Respondents are encouraged to make their submissions to U.S. EPA on recycled paper (which includes significant postconsumer waste paper content where possible) and using two-sided copies.

3. Work to Be Performed

Respondents shall perform, at a minimum, the following response activities:

a. Develop and implement a Site Health and Safety Plan.

b. Develop and implement Site security measures.

c. Develop and implement an air monitoring program.

d. Remove contamination until the cleanup criterion of 5 picoCuries per gram total radium (radium-226 + radium-228) over background is achieved. This cleanup criterion will be met in each 15 centimeter layer below the surface. Averaging over areas up to 100 square meters will be allowed, but only after reasonable efforts have been made to achieve levels As Low As Reasonably Achievable ("ALARA"). It is not U.S. EPA's intent to leave any elevated areas of contamination if at all possible.

e. Establish local background for radium-226 and radium-228 from four soil samples taken on the property at points where the gamma exposure rates are lowest plus eight soil samples taken off-site, but in the immediate vicinity, of the parking lot.

f. Transport and dispose of all characterized or identified hazardous substances, pollutants, wastes, or contaminants at a RCRA/CERCLA/IDNS-approved disposal facility in accordance with the U.S. EPA off-site policy.

g. Conduct off-site surveying and sampling as necessary and, at a minimum, implement the standards of 40 Code of Federal Regulations ("CFR") 192, if deemed necessary should contamination be discovered beyond current site boundaries.

h. Backfill all excavations with suitable material, and if soil, test borrow source for radioactivity and other pertinent characteristics in 40 CFR Part 261.

3.1 Work Plan and Implementation

Within 15 calendar days after the effective date of this Order, the Respondents shall submit to U.S. EPA for approval a draft Work Plan for performing the removal activities set forth above. The draft Work Plan shall provide a description of, and an expeditious schedule for, the activities required by this Order.

U.S. EPA may approve, disapprove, require revisions to, or modify the draft Work Plan. If U.S. EPA requires revisions, Respondents shall submit a revised draft Work Plan within 7 business days of notification. Respondents shall implement the Work Plan as finally approved in writing by U.S. EPA in accordance with the schedule approved by U.S. EPA. Once approved, or approved with modifications, the Work Plan, the schedule, and any subsequent modifications shall be fully enforceable under this Order. Respondents shall notify U.S. EPA at least 48 hours prior to performing any on-site work pursuant to the U.S. EPA approved work plan.

Respondents shall not commence or undertake any removal actions at the Site without prior U.S. EPA approval.

3.2 Health and Safety Plan

Within 15 calendar days after the effective date of this Order, the Respondents shall submit a plan for U.S. EPA review and comment that ensures the protection of the public health and safety during performance of on-site work under this Order. This plan shall comply with applicable Occupational Safety and Health Administration (OSHA) regulations found at 29 CFR Part 1910. If U.S. EPA determines it is appropriate, the plan shall also include contingency planning. Respondents shall incorporate all changes to the plan recommended by U.S. EPA, and implement the plan during the pendency of the removal action.

3.3 Quality Assurance and Sampling

All sampling and analyses performed pursuant to this Order shall conform to U.S. EPA direction, approval, and guidance regarding sampling, quality assurance/quality control (QA/QC), data validation, and chain of custody procedures. Respondents shall ensure that the laboratory used to perform the analyses participates in a QA/QC program that complies with U.S. EPA guidance. Upon request by U.S. EPA, Respondents shall have such a laboratory analyze samples submitted by U.S. EPA for quality assurance monitoring. Respondents shall provide to U.S. EPA the quality assurance/quality control procedures followed by all sampling teams and laboratories performing data collection and/or

analysis. Respondents shall also ensure provision of analytical tracking information consistent with OSWER Directive No. 9240.0-2B, "Extending the Tracking of Analytical Services to PRP-Lead Superfund Sites."

Upon request by U.S. EPA, Respondents shall allow U.S. EPA or its authorized representatives to take split and/or duplicate samples of any samples collected by Respondents or their contractors or agents while performing work under this Order. Respondents shall notify U.S. EPA not less than 3 business days in advance of any sample collection activity. U.S. EPA shall have the right to take any additional samples that it deems necessary.

3.4 Reporting

Respondents shall submit a monthly written progress report to U.S. EPA concerning activities undertaken pursuant to this Order, beginning 30 calendar days after the date of U.S. EPA's approval of the Work Plan, until termination of this Order, unless otherwise directed by the OSC. These reports shall describe all significant developments during the preceding period, including the work performed and any problems encountered, analytical data received during the reporting period, and developments anticipated during the next reporting period, including a schedule of work to be performed, anticipated problems, and planned resolutions of past or anticipated problems.

Any Respondent that owns any portion of the Site, and any successor in title shall, at least 30 days prior to the conveyance of any interest in real property at the Site, give written notice of this Order to the transferee and written notice of the proposed conveyance to U.S. EPA and the State. The notice to U.S. EPA and the State shall include the name and address of the transferee. The party conveying such an interest shall require that the transferee will provide access as described in Section V.4 (Access to Property and Information).

3.5 Final Report

Within 60 calendar days after completion of all removal actions required under this Order, the Respondents shall submit for U.S. EPA review a final report summarizing the actions taken to comply with this Order. The final report shall conform to the requirements set forth in Section 300.165 of the NCP. The final report shall also include a good faith estimate of total costs incurred in complying with the Order, a listing of quantities and types of materials removed, a discussion of removal and disposal options considered for those materials, a listing of the ultimate destinations of those materials, a presentation of the analytical results of all sampling and analyses performed, and accompanying appendices containing all relevant documentation generated during the removal action (e.g., manifests, invoices, bills, contracts, and permits).

The final report shall also include the following certification signed by a person who supervised or directed the preparation of that report:

> Under penalty of law, I certify that, to the best of my knowledge, after appropriate inquiries of all relevant persons involved in the preparation of this report, the information submitted is true, accurate, and complete.

4. Access to Property and Information

Respondents shall provide or obtain access as necessary to the Site and all appropriate off-site areas, and shall provide access to all records and documentation related to the conditions at the Site and the activities conducted pursuant to this Order. Such access shall be provided to U.S. EPA employees, contractors, agents, consultants, designees, representatives, and State of Illinois representatives. These individuals shall be permitted to move freely at the Site and appropriate off-site areas in order to conduct activities which U.S. EPA determines to be necessary. Respondents shall submit to U.S. EPA, upon request, the results of all sampling or tests and all other data generated by Respondents or their contractors, or on the Respondents' behalf during implementation of this Order.

Where work under this Order is to be performed in areas owned by or in possession of someone other than Respondents, Respondents shall obtain all necessary access agreements within 14 calendar days after the effective date of this Order, or as otherwise specified in writing by the OSC. Respondents shall immediately notify U.S. EPA if, after using their best efforts, they are unable to obtain such agreements. Respondents shall describe in writing their efforts to obtain access. U.S. EPA may then assist Respondents in gaining access, to the extent necessary to effectuate the response activities described herein, using such means as U.S. EPA deems appropriate.

5. Record Retention, Documentation, Availability of Information

Respondents shall preserve all documents and information, in their possession or the possession of their contractors, subcontractors or representatives, relating to work performed under this Order, or relating to the hazardous substances found on or released from the Site, for six years following completion of the removal actions required by this Order. At the end of this six year period and at least 60 days before any document or information is destroyed, Respondents shall notify U.S. EPA that such documents and information are available to U.S. EPA for inspection, and upon request, shall provide the originals or copies of such documents and information to U.S. EPA. In addition, Respondents shall provide documents and information retained under this Section at any time before expiration of the six year period at the written request of U.S. EPA.

6. Off-Site Shipments

All hazardous substances, pollutants or contaminants removed off-site pursuant to this Order for treatment, storage or disposal shall be treated, stored, or disposed of at a RCRA/CERCLA/IDNS-approved disposal facility in compliance, as determined by U.S. EPA, with the U.S. EPA Off-Site Rule, 40 CFR § 300.440, 58 Federal Register 49215 (Sept. 22, 1993).

7. Compliance With Other Laws

All actions required pursuant to this Order shall be performed in accordance with all applicable local, state, and federal laws and regulations except as provided in CERCLA Section 121(e) and 40 CFR Section 300.415(i). In accordance with 40 CFR Section 300.415(i), all on-site actions required pursuant to this Order shall, to the extent practicable, as determined by U.S. EPA, considering the exigencies of the situation, attain applicable or relevant and appropriate requirements under federal environmental or state environmental or facility siting laws.

8. Emergency Response and Notification of Releases

If any incident, or change in Site conditions, during the activities conducted pursuant to this Order causes or threatens to cause an additional release of hazardous substances from the Site or an endangerment to the public health, welfare, or the environment, the Respondents shall immediately take all appropriate action to prevent, abate or minimize such release, or endangerment caused or threatened by the release. Respondents shall also immediately notify the OSC or, in the event of his/her unavailability, shall notify the Regional Duty Officer, Emergency Response Branch, Region 5 at (312) 353-2318, of the incident or Site conditions.

Respondents shall submit a written report to U.S. EPA within 7 business days after each release, setting forth the events that occurred and the measures taken or to be taken to mitigate any release or endangerment caused or threatened by the release and to prevent the reoccurrence of such a release. Respondents shall also comply with any other notification requirements, including those in CERCLA Section 103, 42 U.S.C. § 9603, and Section 304 of the Emergency Planning and Community Right-To-Know Act, 42 U.S.C. § 11004.

VI. AUTHORITY OF THE U.S. EPA ON-SCENE COORDINATOR

The OSC shall be responsible for overseeing the implementation of this Order. The OSC shall have the authority vested in an OSC by the NCP, including the authority to halt, conduct, or direct any work required by this Order, or to direct any other response action

undertaken by U.S. EPA or Respondents at the Site. Absence of the OSC from the Site shall not be cause for stoppage of work unless specifically directed by the OSC.

U.S. EPA and Respondents shall have the right to change their designated OSC or Project Coordinator. U.S. EPA shall notify the Respondents, and Respondents shall notify U.S. EPA, as early as possible before such a change is made, but in no case less than 24 hours before such a change. Notification may initially be made orally, but shall be followed promptly by written notice.

VII. PENALTIES FOR NONCOMPLIANCE

Violation of any provision of this Order may subject Respondents to civil penalties of up to $25,000 per violation per day, as provided in Section 106(b)(1) of CERCLA, 42 U.S.C. § 9606(b)(1).

Respondents may also be subject to punitive damages in an amount up to three times the amount of any cost incurred by the United States as a result of such violation, as provided in Section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3). Should Respondents violate this Order or any portion hereof, U.S. EPA may carry out the required actions unilaterally, pursuant to Section 104 of CERCLA, 42 U.S.C. § 9604, and/or may seek judicial enforcement of this Order pursuant to Section 106 of CERCLA, 42 U.S.C. § 9606.

VIII. REIMBURSEMENT OF COSTS

Respondents shall reimburse U.S. EPA, upon written demand, for all response costs incurred by the United States in overseeing Respondents' implementation of the requirements of this Order. U.S. EPA may submit to Respondents on a periodic basis a bill for all response costs incurred by the United States with respect to this Order. U.S. EPA's Itemized Cost Summary, or such other summary as certified by U.S. EPA, shall serve as the basis for payment.

Respondents shall, within 30 days of receipt of the bill, remit a cashier's or certified check for the amount of those costs made payable to the "Hazardous Substance Superfund," to the following address:

U.S. Environmental Protection Agency
Superfund Accounting
P.O. Box 70753
Chicago, Illinois 60673

Respondents shall simultaneously transmit a copy of the check to the Director, Superfund Division, U.S. EPA Region 5, 77 West Jackson Blvd., Chicago, Illinois, 60604-3590. Payments shall be

XI. MODIFICATIONS

Modifications to any plan or schedule may be made in writing by the OSC or at the OSC's oral direction. If the OSC makes an oral modification, it will be memorialized in writing within 7 business days; however, the effective date of the modification shall be the date of the OSC's oral direction. The rest of the Order, or any other portion of the Order, may only be modified in writing by signature of the Director, Superfund Division, Region 5.

If Respondents seek permission to deviate from any approved plan or schedule, Respondents' Project Coordinator shall submit a written request to U.S. EPA for approval outlining the proposed modification and its basis.

No informal advice, guidance, suggestion, or comment by U.S. EPA regarding reports, plans, specifications, schedules, or any other writing submitted by the Respondents shall relieve Respondents of their obligations to obtain such formal approval as may be required by this Order, and to comply with all requirements of this Order unless it is formally modified.

XII. NOTICE OF COMPLETION

After submission of the Final Report, Respondents may request that U.S. EPA provide a Notice of Completion of the work required by this Order. If U.S. EPA determines, after U.S. EPA's review of the Final Report, that all work has been fully performed in accordance with this Order, except for certain continuing obligations required by this Order (e.g., record retention), U.S. EPA will provide written notice to the Respondents. If U.S. EPA determines that any removal activities have not been completed in accordance with this Order, U.S. EPA will notify the Respondents, provide a list of the deficiencies, and require that Respondents modify the Work Plan to correct such deficiencies. The Respondents shall implement the modified and approved Work Plan and shall submit a modified Final Report in accordance with the U.S. EPA notice. Failure to implement the approved modified Work Plan shall be a violation of this Order.

XIII. ACCESS TO ADMINISTRATIVE RECORD

The Administrative Record supporting these removal actions is available for review during normal business hours in the U.S. EPA Record Center, Region 5, 77 W. Jackson Blvd., Seventh Floor, Chicago, Illinois. Respondents may contact Nancy-Ellen Zusman, Assistant Regional Counsel, at (312) 886-5825 to arrange to review the Administrative Record. An index of the Administrative Record is attached to this Order.

XIV. OPPORTUNITY TO CONFER

Within 3 business days after receipt of this Order, Respondents may request a conference with U.S. EPA. Any such conference shall be held within 5 business days from the date of the request, unless extended by agreement of the parties. At any conference held pursuant to the request, Respondents may appear in person or be represented by an attorney or other representative.

If a conference is held, Respondents may present any information, arguments or comments regarding this Order. Regardless of whether a conference is held, Respondents may submit any information, arguments or comments (including justifications for any assertions that the Order should be withdrawn against a Respondent), in writing to U.S. EPA within 2 business days following the conference, or within 7 business days of receipt of the Order if no conference is requested. This conference is not an evidentiary hearing, does not constitute a proceeding to challenge this Order, and does not give Respondents a right to seek review of this Order. Requests for a conference shall be directed to Nancy-Ellen Zusman, Assistant Regional Counsel, at (312) 886-5825. Written submittals shall be directed as specified in Section V.2 of this Order.

XV. SEVERABILITY

If a court issues an order that invalidates any provision of this Order or finds that Respondents have sufficient cause not to comply with one or more provisions of this Order, Respondents shall remain bound to comply with all provisions of this Order not invalidated by the court's order.

XVI. EFFECTIVE DATE

This Order shall be effective 10 business days following issuance unless a conference is requested as provided herein. If a conference is requested, this Order shall be effective 5 business days after the day of the conference.

IN THE MATTER OF:

LINDSAY LIGHT II SITE
CHICAGO, ILLINOIS

IT IS SO ORDERED

BY: _____ DATE: 6/6/96

William E. Muno, Director
Superfund Division
United States
Environmental Protection Agency
Region 5

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ADMINISTRATIVE RECORD
FOR
LINDSAY LIGHT II
CHICAGO, ILLINOIS

UPDATE #3
JUNE 3, 1996

DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
07/26/95	STS Consultants Ltd.	U.S. EPA	The Chicago Dock & Canal Trust Report for Characterization Investigation: Gamma Radiation Survey, Lindsay Light II Site, Chicago, IL w/Attachments A-E (3 Volumes)	1324

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ADMINISTRATIVE RECORD
FOR
LINDSAY LIGHT II
CHICAGO, ILLINOIS

UPDATE #2 (REVISED)
APRIL 1, 1996

DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
04/22/96	Simon, V., U.S. EPA	Muno, W., U.S. EPA	Action Memorandum: Determination of Threat to Public Health and the Environment at the Lindsay Light II Site, Chicago, IL	40

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ADMINISTRATIVE RECORD
FOR
LINDSAY LIGHT II
CHICAGO, ILLINOIS

UPDATE #1
SEPTEMBER 18, 1995

DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
09/00/93	Rogers & Associates Engineering Corporation	Chicago Dock & Canal Trust	Work Plan for Characterization of Radioactive Contamination, 316 East Illinois St., Chicago, Illinois: Appendix E, Supplemental; Other Sampling	17
10/05/95	Simon, V., U.S. EPA	Muno, W., U.S. EPA	Action Memorandum: Determination of Threat to Public Health or the Environment at the Lindsay Light II Site	22

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ADMINISTRATIVE RECORD
FOR
LINDSAY LIGHT II SITE
CHICAGO, ILLINOIS

ORIGINAL
May 2, 1994

DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
06/21/93	Karl, R., U.S. EPA	Klinger, J., Illinois Dept. of Nuclear Safety	Letter Illinois Dept. of Nuclear Safety	1
08/18/93	Kouris, T., Ecology & Environment, Inc.	Pfundheller, J., U.S.EPA	Letter re: Site Assessment	4
08/26/93	TMA Eberline	Ecology & Environment, Inc.	Thermoluminescent Dosimeter Badges Data	3
08/27/93	Klinger, J., Illinois Dept. of Nuclear Safety	Karl, R., U.S. EPA	Response to U.S. EPA Letter Dated 6/21/93	2
1/27/94	Muno, W., U.S. EPA	Chicago Dock & Canal Trust	Administrative Order by Consent	16
07/11/94	Simon, V., U.S. EPA	Muno, W., U.S. EPA	Action Memorandum	12

ATTACHMENT B

LIABILITY FILE INDEX

1. Minutes from meetings of Lindsay Light II Company.
   1922, 1924, 1925, 1929, 1931.

2. Chicago Tribune article.
   July 1993.

3. 104(e) response from Kerr-McGee Corporation.
   January 3, 1994.

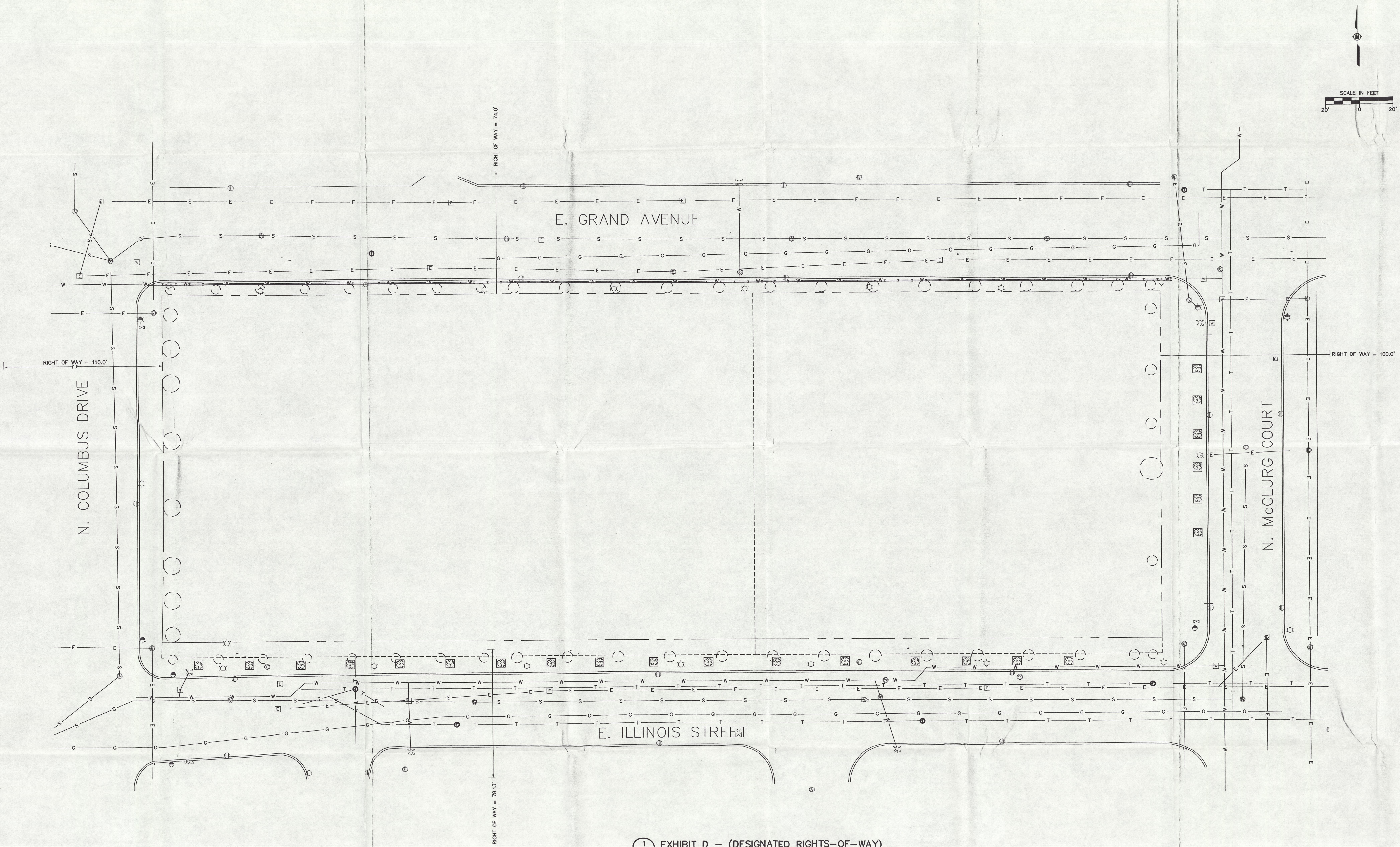
4. Press release issued by The Chicago Dock & Canal Trust.
   July 6, 1993.

5. Enforcement Confidential Addendum from Action Memo.
   April 1996.

LIST OF RESPONDENTS RECEIVING UNILATERAL ADMINISTRATIVE ORDER
LINDSAY LIGHT II SITE

Kerr-McGee Chemical Corporation
c/o Richard A. Meserve, Esq.
Covington & Burling
1201 Pennsylvania Avenue, N.W.
P.O. Box 7566
Washington, D.C. 20044-7566

Chicago Dock & Canal Trust
c/o Vincent S. Oleskiewicz, Esq.
Baker & McKenzie
One Prudential Plaza
130 East Randolph Drive
Chicago, Illinois 60601



1/1 EXHIBIT D – (DESIGNATED RIGHTS-OF-WAY)
SCALE: 1"=20'

NOTES:

(A) – THE DESIGNATED RIGHTS-OF-WAY DO NOT INCLUDE ANY PORTIONS OF ANY PUBLIC STREETS OCCUPIED OR TO BE OCCUPIED BY IMPROVEMENTS LOCATED MAINLY ON THE SITE.

(B) – THE DESIGNATED RIGHTS-OF-WAY DO NOT INCLUDE AND AREA 5.17 FEET WIDE ADJACENT TO E. ILLINOIS STREET DEPICTED AS THE AREA "TO BE VACATED" ON THE DRAWING ATTACHED TO CITY OF CHICAGO ORDINANCE ENACTED SEPTEMBER 1, 1999.

(C) – THE DESIGNATED RIGHTS-OF-WAY DO NOT INCLUDE ANY ENCROACHMENTS CONSTRUCTED PERSUANT TO CITY OF CHICAGO ORDINANCE ENACTED OCTOBER 7, 1998 REGARDING APPROVAL FOR LOCATION OF ENCROACHMENTS WITHIN PUBLIC STREETS.

(D) – NO PORTION OF THE DESIGNATED RIGHTS-OF-WAY INCLUDES ANY PORTION OF THE SITE.

(E) – RIGHT-OF-WAY DIMENSIONS FROM 21st EDITION ATLAS OF COOK COUNTY, ILLINOIS, VOLUME 9, TH SIDWELL COMPANY, 1998

REVISION NO.	DESCRIPTION	DATE	BY
6	GENERAL REVISIONS	9/15/99	TC
5	GENERAL REVISIONS	5/19/99	TC
4	GENERAL REVISION	1/13/99	EJ
3	GENERAL REVISION	12/29/98	EJ
2	GENERAL REVISION	5/22/98	EJ
1	B.O.U. ISSUE	5/05/98	EJ

DRAWN BY GRS DATE 4-13-98
CHECKED BY EJ DATE 4-13-98
APPROVED BY EJ DATE 4-13-98
CADFILE X:\PROJECTS\24418\RR\ G1plan1.dwg 90/9/1665 9:15

DESIGNATED RIGHTS-OF-WAY

RIVER EAST CENTER
MIXED USE DEVELOPMENT
300 EAST ILLINOIS STREET
CHICAGO, ILLINOIS

RIVER EAST CENTER

CASE FOUNDATION COMPANY
A KELLER COMPANY
Caissons * Piling * Slurry Wall/Trenches
P.O. Box 40 1325 West Lake St. Roselle, IL 60172 630-529-2911

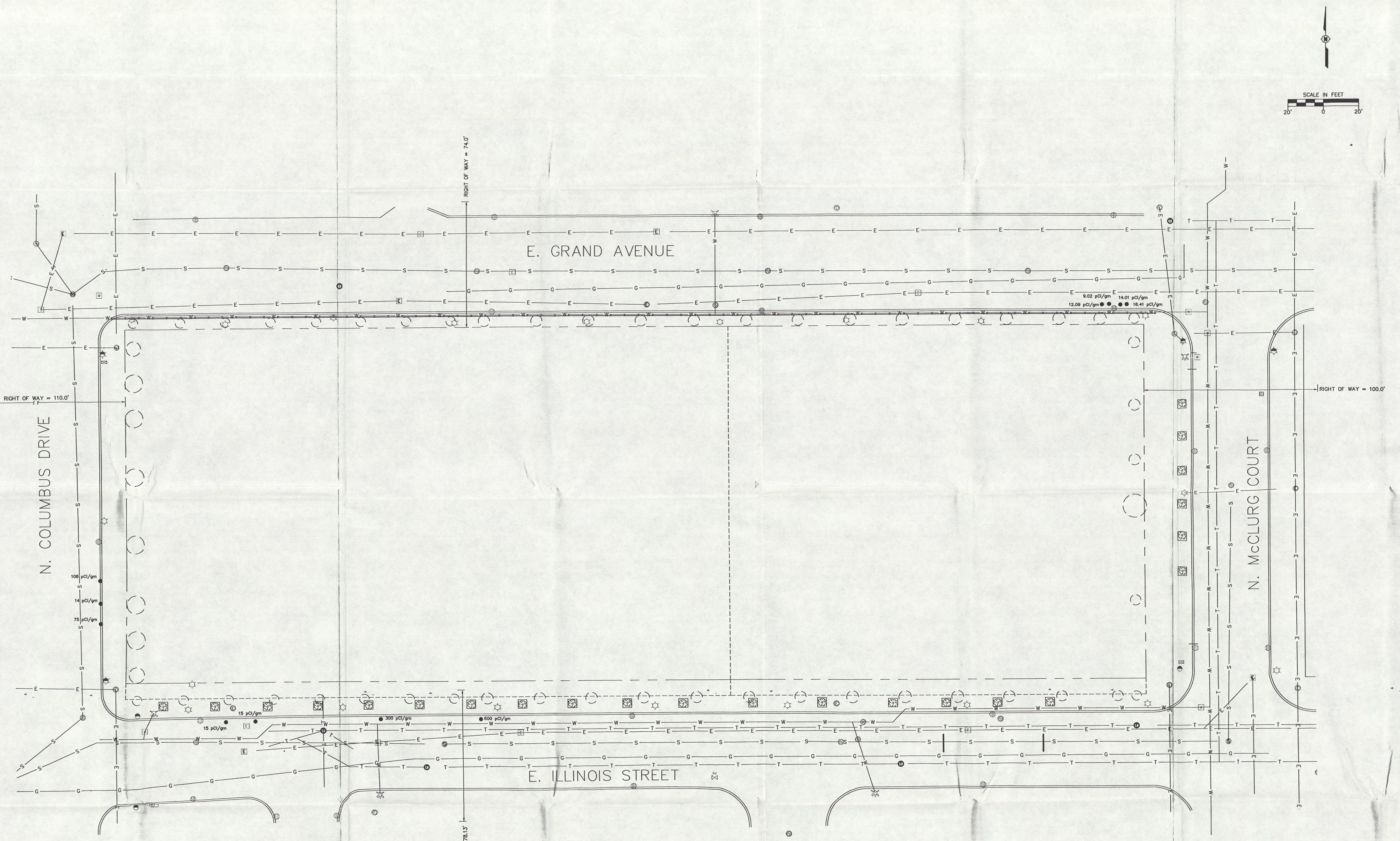
STS PROJECT NUMBER
24418-RR

STS PROJECT FILE
G1plan1.dwg

SCALE
AS SHOWN

SHEET NUMBER

PROJECTS\24418\RR\G1plan1.dwg Fri Sep 17 15:31:44 1999 STS VERNON HILLS, ILLINOIS 60061



1/2 EXHIBIT E – (IMPACTED RIGHTS-OF-WAY)
SCALE: 1"=20'

LEGEND

● 300 pCi/gm — LOCATION OF THORIUM IMPACTED SOIL AND MEASURED TOTAL RADIUM CONCENTRATION

NOTES:

(1) – NO PORTION OF THE 5.17 FOOT STRIP OF LAND DEPICTED AS THE AREA "TO BE VACATED" ON THE DRAWING ATTACHED TO THE CITY OF CHICAGO ORDINANCE ENACTED SEPTEMBER 1, 1999 AND NO PORTION OF THE ENCROACHMENTS APPROVED BY THE CITY OF CHICAGO ENACTED OCTOBER 7, 1998 AND NO PORTION OF THE SITE LIES WITHIN THE AREA DESIGNATED HEREON AS "IMPACTED RIGHTS-OF-WAY"

(2) – RIGHT-OF-WAY DIMENSIONS FROM 21st EDITION ATLAS OF COOK COUNTY, ILLINOIS, VOLUME 9, TH SIDWELL COMPANY, 1998

REVISION NO.	DESCRIPTION	DATE	BY
6	GENERAL REVISIONS	9/15/99	TC
5	GENERAL REVISIONS	5/19/99	TC
4	GENERAL REVISION	1/13/99	EJ
3	GENERAL REVISION	12/29/98	EJ
2	GENERAL REVISION	5/22/98	EJ
1	B.O.U. ISSUE	5/05/98	EJ

DRAWN BY	GRS	DATE	4-13-98
CHECKED BY	EJ	DATE	4-13-98
APPROVED BY	EJ	DATE	4-13-98
CADFILE	X:\PROJECTS\24418\RR\ G1plan2.dwg 90/9'/1665 9.:15		

IMPACTED RIGHTS-OF-WAY

RIVER EAST CENTER
MIXED USE DEVELOPMENT
300 EAST ILLINOIS STREET
CHICAGO, ILLINOIS

RIVER EAST CENTER

CASE FOUNDATION COMPANY
A KELLER COMPANY
Caissons * Piling * Slurry Wall/Trenches
P.O. Box 40 1325 West Lake St. Roselle, IL 60172 630-529-2911

STS PROJECT NUMBER: 24418-RR
STS PROJECT FILE: G1plan2.dwg
SCALE: AS SHOWN
SHEET NUMBER: 1.1

X:\PROJECTS\24418\RR\G1plan2.dwg Fri Sep 17 15:33:11 1999 STS VERNON HILLS, ILLINOIS 60061

HIGHWAY AUTHORITY AGREEMENT
FOR RIGHTS-OF-WAY ADJACENT TO
RIVER EAST L.L.C.
LINDSAY LIGHT II PROJECT
HEALTH & SAFETY PLAN

_____ _____

Permit Applicant Date

_____ _____

Permit Applicant Date
Project Coordinator
Health & Safety Coordinator

EMERGENCY PLAN/DESIGNATED RIGHTS-OF-WAY SURVEILLANCE PLAN

In the event excavation within the identified impacted area (Sheet 1.1) is required on an emergency basis, or if a permitee requires access to any portion of the designated rights-of-way, the following shall be incorporated to the extent possible, and all personnel working in the potentially impacted areas shall be given the opportunity to read this section of the Health and Safety Plan (HASP). The remainder of the attached HASP will be implemented as conditions allow.

A. PROTECT WORKERS POTENTIALLY EXPOSED TO IMPACTED SOIL

1. Notify workers that levels of radiation above background levels may be present in excavated soil.

2. Avoid ingesting soil.
   Avoid inhaling dust from contaminated areas.
   Minimize contact with the soil to the extent possible.
   Wear protective coveralls or disposable coveralls to facilitate cleanup of workers.

3. Screen excavation for gamma radiation (NaI detector)

B. AVOID SPREAD OF CONTAMINATION

1. Limit erosion transport of excavated soil through use of hay bales, sand bags, temporary berm materials to minimize uncontrolled runoff.

2. Cover any excavation soil piles until screened for potential contamination.

3. Screen soil prior to transport away from project site using NaI gamma detector.

C. MINIMIZE POTENTIAL PUBLIC CONTACT.

1. Limit access to excavated soil using barricades, temporary fencing, jersey barriers.

2. Cover excavated piles to minimize fugitive dust. Wet dusty excavations.

3. Control, to the extent possible, off-site tracking by vehicles, potentially contaminated boots or clothing by workers.

D. MONITOR CONTAMINATION

1. To the extent practicable, provide gamma radiation screening of the exposed soils in the excavation (NaI detector).

2. When possible, provide high volume air samplers immediately adjacent to potential or known exposed contaminated soil, to monitor for fugitive emissions (dust, radon gas). **[This is not required for the surveillance of designated rights-of-way.]**

3. Survey ground surface/pavement surface around potential or known contamination locations for elevated gamma radiation (NaI detector).

E. DISPOSAL

1. Any excavated material should be disposed as required by law.

F. NOTIFY AUTHORITIES

Notify agencies identified on the enclosed emergency notification list. **[This is not required for the surveillance of designated rights-of-way.]**

USEPA	312-353-2318	
IDNS	217-785-0600	(Illinois Department of Nuclear Safety)
Chicago D.E.	312-744-7672	(Chicago Department of the Environment)
IEMA	217-782-7860	(Illinois Emergency Management Agency)

Notification should include, as a minimum, the following

- Location of Excavation
- Potential Contact with Thorium Containing Soil (11 (e)(2) by-product material)
- Field surveys and sampling measured a maximum total radium (Ra226 + Ra228) concentration of 600 pCi/gm in soils remaining, although higher concentrations may be present.

The following support services should be secured:

- Gamma radiation survey equipment (micro-R meter, NaI detector) should be secured promptly for site screening.
- Health Physics contractors, personnel and monitoring equipment should be secured promptly to provide survey and monitoring services in accordance with the attached plan.

APPENDIX A

PERSONNEL QUALIFICATIONS

The following are minimum qualifications for project personnel.

Project Coordinator:

- OSHA 40-hour health and safety training
- 8-hour supervisory training
- 4-hour radiation hazard training
- Responsible for work order implementation
- Familiar with this HASP

Field Team Leader:

- OSHA 40-hour health and safety training
- 4-hour radiation hazard training
- Responsible for tailgate safety meetings
- Familiar with this HASP

Health Physics Personnel (under direct supervision of a CHP):

- OSHA 40-hour health and safety training
- Familiar with this HASP
- Responsible for dosimeter/personnel monitoring in accordance with Section 4.3.2 of this HASP

Health and Safety Coordinator:

- OSHA 40-hour health and safety training
- 8-hour supervisor training
- 4-hour radiation hazard training
- Familiar with this HASP
- Authorized to enforce provisions of this HASP

Radon gas??

Chicago Utility Alert Network CUAN

600pCi/g?

TABLE OF CONTENTS

TABLE OF CONTENTS (CONTINUED)

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

EMERGENCY PHONE NUMBERS

IN THE EVENT OF AN EMERGENCY DIAL: 911

AMBULANCE SERVICE 911

FIRE DEPARTMENT 911

EMERGENCY RESCUE SERVICE 911

POLICE DEPARTMENT 911

NATIONAL RESPONSE CENTER 1-800-424-8802

POISON CONTROL CENTER 1-800-732-2200

NORTHWESTERN MEMORIAL HOSPITAL ..... (312) 908-2000

ILLINOIS DEPARTMENT OF NUCLEAR SAFETY
(IDNS) EMERGENCY NUMBER ..... (217) 785-0600

PERMIT APPLICANT

ILLINOIS EMERGENCY MANAGEMENT ..... (217) 782-7860

U.S. EPA REGION V 24-HOUR EMERGENCY NUMBER ....(312) 353-2318

1. SCOPE OF PLAN

1.1 Work of Plan

The following Health and Safety Plan (HASP) will be utilized and modified as necessary in order to minimize and prevent exposures to hazardous substances and conditions related to excavation in public rights-of-way adjacent to the Lindsay Light II site. These rights-of-way and identified impacted areas are shown on Sheet 1.1, and are referred to herein as the Site.

All personnel assigned to work at the Site will be required to review the contents of this HASP and to strictly adhere to the policies and procedures listed herein. This HASP is for use only by the Permit Applicants, their designated contractors and consultants, and approved Site visitors. USEPA and other agencies are not considered visitors and will be required to conform to their own health and safety plans.

This plan meets the requirements of OSHA 29 CFR 1910.120, Hazardous Waste Operations and Emergency Responses, and applicable subparts of OSHA 29 CFR 1926, 1910, (particularly 1910.1096 pertaining to ionizing radiation), and 10 CFR, at the time this plan is being prepared (September 1999). The permit applicant should confirm that the proposed actions comply with regulations at the time the proposed actions are to be implemented.

1.2 Background

Thorium contamination of the Lindsay Light II Site resulted from operations related to the storage and processing of thorium-bearing sand. The Lindsay Light II Site was remediated under a Unilateral Administrative Order from the USEPA. Several areas of contamination remained outside the Lindsay Light II Site following the completion of the remediation. These areas exhibit radioactivity at levels above normal background for the area. Measurements were made along the entire excavated limits, with representative readings for the impacted zones shown on Sheet 1.1. The levels that might be encountered in excavating could be higher, based on measured levels previously excavated at vicinity locations.

The contaminated soil does not represent a risk as residual contamination in place. However, excavation in the areas exhibiting evidence of residual contamination requires appropriate health and safety procedures to protect workers and the public. These procedures are presented herein. Additionally, any contaminated material removed from the site will require appropriate management and disposal. A separate Work Order as is required for management and disposal of any contaminated excavation soil may be required. USEPA may require review and approval of a Work Order prior to start of work. That Work Order will identify volumes of material to be excavated and disposed, specify permits required for transport and disposal, identify the disposal sites, and specify the clean-up criteria based on the contamination encountered. For Lindsay Light II Site, the clean-up threshold for thorium impacted soil was 5 pCi/gm above background, with a background of 2.1 pCi/gm total radium.

The clean-up criteria was 7.1 pCi/gm total radium (Ra226 + Ra228). The waste management plan is not included herein as that will be project specific.

The objective in appropriate management of the contaminated material is to operate the proposed work under exposure levels which are as low as reasonably achievable (ALARA). This concept applies to exposure through ingestion, inhalation, external exposure, internal exposure, on-site or off-site. ALARA concepts should be considered throughout the implementation of the HASP, and the associated work in the impacted areas.

2. SAFETY MANAGEMENT

The following safety management structure will be utilized for the implementation, administration, and monitoring of the HASP.

2.1 HEALTH AND SAFETY COORDINATOR

The Health and Safety Coordinator (HSC) shall assume overall responsibility for the HASP. The HSC or designee shall monitor and maintain quality assurance of the HASP until project completion. Principal duties of the HSC include:

- Review project background data,
- Approve all HASP modifications,
- Administer and enforce the HASP,
- Evaluate the adequacy of personal protective equipment (PPE) to be used by Site personnel,
- Conduct required on-site training except tailgate safety meetings that will be conducted by the Field Team Leader,
- Brief visitors on work Site conditions, and
- Administer personnel and ambient air monitoring procedures.

The HSC or designee has the authority to stop work in the event conditions develop which pose an unreasonable risk to Site personnel or persons in the vicinity.

Appendix A presents qualifications for project personnel.

3. PERSONNEL RESPONSIBILITIES

The HSC or designee will administer and supervise the HASP at the work-site level. He will monitor all operations and will be the primary on-site contact for health and safety issues, and will have full authority to stop operations if conditions are judged to be hazardous to on-site personnel or the public.

The HSC will brief all Site personnel on the contents of the HASP. Personnel will be required to review the HASP, and have the opportunity to ask questions about the planned work or hazards. The Field Team Leader will conduct tailgate safety meetings to familiarize the Site personnel with Site conditions, boundaries, and physical hazards. Site personnel will conduct their assigned tasks in accordance with the HASP at all times.

If at any time Site personnel observe unsafe conditions, faulty equipment or other conditions which could jeopardize personnel health and safety, they are required to immediately report their observations to the HSC or Field Team Leader.

Work zones will be established at the Site. These zones include clean/support zones, decontamination zones, and exclusion zones. Although the clean/support zones are anticipated to remain fixed, other zones will move about the Site as work progresses. Sheet 1.1 shows the impacted areas where exclusion zones may be established during excavation activities.

4. HAZARD ASSESSMENT

The following represents potential hazards associated with this project.

4.1 PRINCIPAL CONTAMINANTS (KNOWN OR SUSPECTED)

- Thorium
- Uranium
- Radium
- Radon

The contaminants are present in the soil at low concentrations. These primary routes of entry to the body will be considered:

ROUTE	ENTRY MADE VIA:
Inhalation:	Airborne dust containing heavy metal radionuclides, and radon gases
Ingestion:	Airborne dust containing heavy metal radionuclides/contaminants.
	Improper or poor personal hygiene practices.
Eye and Skin:	Direct contact with contaminants.
	Improper or poor personal hygiene practices.
	Airborne dust containing heavy metal/radionuclide contaminant.
	Cuts and abrasions.
Direct Exposure:	Penetrating gamma radiation in air and soil.

4.2 PHYSICAL HAZARDS

Before field activities begin, the HSC will conduct a Site reconnaissance to identify any real or potential hazards created from Site activities. Physical hazards inherent to construction activities and power-operated equipment may exist.

4.2.1 Heat Stress

Field activities in hot weather create a potential for heat stress. The warning symptoms of heat stress include fatigue; loss of strength; reduced accuracy, comprehension and retention; and reduced alertness and mental capacity. To prevent heat stress, personnel shall receive adequate water supplies and electrolyte replacement fluids, and maintain scheduled work/rest periods.

The Field Team Leader or designee shall continuously visually monitor personnel to note for signs of heat stress. In addition, field personnel will be instructed to observe for symptoms of heat stress and methods on how to control it. One or more of the following control measures can be used to help control heat stress.

- Provision of adequate liquids to replace lost body fluids. Employees must replace body fluids lost from sweating. Employees must be encouraged to drink more than the amount required to satisfy thirst. 12 to 16 ounces every half hour is recommended. Thirst satisfaction is not an accurate indicator of adequate salt and fluid replacement. Replacement fluids can be commercial mixes such as Gatorade

- Establishment of a work regimen that will provide adequate rest periods for cooling down. This may require additional shifts of workers.

- Breaks should be taken in a cool and shaded rest area (77 degrees is best).

- Employees shall remove impermeable protective garments during rest periods.

- Employees shall not be assigned other tasks during rest periods.

- All employees shall be informed of the importance of adequate rest, acclimation, and proper diet in the prevention of heat stress.

4.2.2 Cold Stress

If the field activities occur during a period when temperatures average below freezing, the following guidelines will be followed.

Persons working outdoors in temperatures of 40 degrees and below may suffer from cold exposure. During prolonged outdoor periods with inadequate clothing, effects of cold exposure may even occur at temperatures well above freezing. Cold exposure may cause severe injury by freezing exposed body surfaces (frostbite) or result in profound generalized cooling, possibly causing death. Areas of the body which have

high surface area-to-volume ratios such as fingers, toes and ears are the most susceptible to frostbite.

Two factors influence the development of a cold injury: ambient temperature and the velocity of the wind. Wind chill is used to describe the chilling effect of moving air in combination with low temperature. For instance, 10° F with a wind of 15 miles per hour (mph) is equivalent in chilling effect to still air at -18°F.

As a general rule, the greatest incremental increase in wind chill occurs when a wind of 5 mph increases to 10 mph. Additionally, water conducts heat 240 times faster than air. Thus, the body cools suddenly when external chemical-protective equipment is removed if the clothing underneath is perspiration-soaked.

Local injury resulting from cold is included in the generic term "frostbite". There are several degrees of damage. Frostbite of the extremities can be categorized into:

- Frost nip or incipient frostbite: Characterized by sudden blanching or whitening of skin.
- Superficial frostbite: Skin has a waxy or white appearance and is firm to the touch, but tissue beneath is resilient.
- Deep frostbite: Tissues are cold, pale, and solid; extremely serious injury.

Prevention of frostbite is vital. Keep the extremities warm. Wear insulated clothing as part of one's protective gear during extremely cold conditions. Check for symptoms of frostbite at every break. The onset is painless and gradual--you might not know you have been injured until it is too late.

To administer first aid for frostbite, bring the victim indoors and rewarm the areas quickly in water 95° to 100°F. Give individual a warm drink--not coffee, tea, or alcohol. The victim should not smoke. Keep the frozen parts in warm water or covered with warm clothes for 30 minutes, even though the tissue will be very painful as it thaws; then elevate the injured area and protect it from injury. Do not allow blisters to be broken. Use sterile, soft, dry material to cover the injured areas. Keep victim warm and get immediate medical care.

4.2.3 Electrical Hazards

Overhead power lines, downed electrical wires, buried cables and improper use of electrical extension cords can pose a danger of shock or electrocution. All Site personnel should immediately report to the Field Team Leader any condition that could result in a potential electrical hazard.

The Field Team Leader will notify Site personnel during the safety meetings of the locations of known underground cables and utilities.

4.2.4 Noise Hazard

Operation of equipment may present a noise hazard to workers. Site personnel will utilize hearing protection when noise levels are determined to be in excess of 29 CFR 1910.95 requirements. Noise monitoring will be performed to determine noise levels.

4.2.5 Overt Chemical Exposure

4.2.5.1 Non-Radioactive Exposure

Typical response procedures include:

SKIN CONTACT: Use copious amounts of soap and water. Wash/rinse affected area thoroughly, then provide appropriate medical attention. Eye wash will be provided on-site at the work zone and support zone as appropriate. If affected, eyes should be continuously flushed for a minimum of 15 minutes.

INHALATION: Move to fresh air and transport to hospital. Decontaminate as other actions permit.

INGESTION: Transport to emergency medical facility Decontaminate as permitted by other requirements.

PUNCTURE WOUND OR LACERATIONS: Transport to emergency medical facility. Field Team Leader will provide Material Safety Data Sheets (MSDS) to medical personnel as requested. Decontaminate as permitted by other requirements.

4.2.5.2 Radioactive Exposure

The contamination materials are soil and debris which can reasonably be removed through the decontamination procedure in Section 9.0. Residual concentrations are not sufficient to produce an acute effect requiring emergency response.

4.2.6 Adverse Weather Conditions

In the event of adverse weather conditions, the Field Team Leader will determine if work can continue without endangering the health and safety of field workers. Some items to be considered before determining if work should continue are:

Potential for heat stress and heat-related injuries.

Potential for cold stress and cold-related injuries.

Treacherous weather-related working conditions.

Limited visibility.

Potential for electrical storms or high winds.

4.3 MEDICAL EVALUATION AND SURVEILLANCE PROGRAM

All field project personnel shall receive a medical evaluation in accordance with 29 CFR 1910.120 and Appendix A. Personnel who receive a medical evaluation will be notified by the medical contractor as to the outcome of their evaluation. This will be in the form of a confidential report addressed to the individual and will contain a breakdown of the clinical findings. In addition, it will indicate any areas of concern which would justify further medical consultation by the individual's personal physician. In the event that the areas of concern are of a severe nature, a follow-up notification will be made to the individual by the medical consultant to answer any questions the employee may have.

4.3.1 Dosimetry/Personnel Monitoring

All project personnel shall participate in a dosimetry program administered by the Project Health Physics Personnel. (The dosimetry program shall comply with 32 IAC 340[1], i.e. dosimeters shall be processed by a dosimetry processor accredited by the National Voluntary Laboratory Accreditation Program.) The Project Health Physics Personnel shall maintain records of all radiation exposures incurred by field personnel including all contractors. These records will be maintained in an up-to-date manner to comply with the requirements of 32 IAC 340.4010. The HSC shall review the results of personal exposure monitoring to determine compliance with exposure limit requirements. (Personnel qualifications for health physics personnel are included in Appendix A.)

4.3.2 Requirement for Dosimetry

Personal dosimetry is required for anyone who enters a radiologically controlled area in which he/she may receive in one calendar year a dose in excess of 10% of the limits in 32 IAC 340. Any person who works in a radiation area will be required to have a personal dosimeter. As a matter of policy, all individuals shall be required to use a dosimeter (either self-reading type, film badge or Thermoluminescence Detector (TLD)) whenever they enter the Exclusion Zone.

4.3.3 Bioassay

Bioassay is the determination of the types and amounts of radioactive materials which are inside the body. By analyzing the rate of deposition, the rate of excretion, and any other available information regarding placement in the body, internal exposures from radioactive materials can be estimated.

... Bioassays are not anticipated to be required for the excavation and removal activities proposed, based on levels documented as present. The determination of the need for bioassay will be based on dosimetry monitoring and review and recommendations fromthe Project Health Physics personnel.

[1] The IDNS regulations are usually more restrictive than US Nuclear Regulatory Commission (NRC) regulations. However, if there is a conflict between IDNS and NRC regulations, the NRC regulations will be used to determine compliance

4.3.3
Is this still true?

4.3.4 Emergency Medical Treatment

Emergency first aid should be administered on-site as appropriate. The individual should be decontaminated if possible, depending on the severity of the injury, and transported to the nearest medical facility, if needed. Treatment of the injury is of primary concern and decontamination a secondary concern. Levels of radioactive contamination at the Site could be acutely hazardous if decontamination is not undertaken during an emergency situation. The Field Team Leader will complete the appropriate incident report, if warranted. *See Section 4.4, Accident and Incident* Reporting.

An emergency first-aid station will be established and will include a first-aid kit for on-site emergency first aid.

Provisions for emergency medical treatment shall be integrated with the following guidelines:

- At least one individual qualified to render first aid and Cardiopulmonary Resuscitation (CPR) will be assigned to each shift.
- Emergency first aid stations in the immediate work vicinity.
- Conspicuously posted phone numbers and procedures for contacting ambulance services, fire department, police, and medical facilities.
- Maps and directions to medical facilities.
- Conspicuously posted evacuation routes and gathering area locations shall be posted around the Site.

4.4 ACCIDENT AND INCIDENT REPORTING

All accidents, injuries, or incidents will be reported to the HSC. This accident/incident will be reported as soon as possible to the employee's supervisor. An Accident/Incident Form will be completed by the Field Team Leader, and a copy will be forwarded to the Project Manager. A copy of the form is shown as Figure 4.1.

Figure 4.1

Accident/Exposure Investigation Report (Page 1 of 3)

Accident/Exposure Investigation Report

Company			Date
Investigation Team			
Employee's Name & ID			
Sex Age Job Description			
Department & Location			
Accident Date & Time			
Date & Time Accident Reported to Supervisor			
Nature of Incident			
Nature of Injury			
Referred to Medical Facility/Doctor		Yes	No
Employee Returned to Work	Yes	Date/Time	No
Injured Employee Interview/Statement—Attached			
Witnesses			
Witnesses Interviews/Statements—Attached			
Photographs of Site—Attached			
Diagrams of Site—Attached			
Equipment Records—Attached—Reviewed		Yes	No

Accident/Exposure Incident Description

Make additional copies of this form as needed. (form provided courtesy of Safety Publications of California © 1990)

Figure 4.1

Accident/Exposure Investigation Report (Page 3 of 3)

Accident/Exposure Investigation Report

Accident Description

Date & Time **Location**

Employees Involved

Employee Interview/Statement—Injured Employee—Witness

Employee Name

Interviewed By

Accident Diagram/Photographs

Make additional copies of this form as needed. (form provided courtesy of Safety Publications of California © 1990)

Figure 4.1

Accident/Exposure Investigation Report (Page 2 of 3)

Accident/Exposure Investigation Report

Accident Description

Date & Time **Location**

Employees Involved

Preventive Action Recommendations

Corrective Actions Completed	Manager Responsible	Date Completed

—Employee Lost Time—Temporary Help—Cleanup—Repair—Discussion—

Accident Cost Analysis	Investigation	Compliance	Total Cost
Medical			
Production Loss			

Report Prepared By **Date Completed**

Safety Committee Review **Yes** **No**

Corrective Action **Date Started**

Safety Communication Notice Prepared **Date**

Safety Director Signature

Make additional copies of this form as needed. (form provided courtesy of Safety Publications of California © 1990)

5. TRAINING

All Site personnel shall be trained and certified in accordance with 29 CFR 1910.120.

5.1 PROJECT- AND SITE-SPECIFIC TRAINING

Prior to project start-up, all assigned personnel shall receive an initial project- and site-specific training session. This training shall include, but not be limited to, the following areas:

- Review of the Health and Safety Plan;
- Review of applicable radiological and physical hazards (including basic radiation principles and construction site hazard s);
- PPE levels to be used by Site personnel;
- Site security control;
- Emergency response and evacuation procedures;
- Project communication;
- Required decontamination procedures;
- Prohibited on-site activities;
- Instructions to workers in accordance with 10 CFR 1912; and
- U.S. NRC Regulatory Guide 8.13 and Declared Pregnant Woman Policies (Females).

5.2 VISITOR ORIENTATION

All non-essential personnel and visitors who plan to enter the exclusion zone will be briefed on the HASP requirements and 10 CFR 1912 requirements prior to entry with a trained Site escort. In addition, female visitors will be instructed regarding U.S. NRC Regulatory Guide 8.13 and Declared Pregnant Woman Policies. Visitors will review the Visitor Information Sheet, Figure 5.1.

5.3 SAFETY "TAILGATE" MEETINGS

Before the start of work each day, the Field Team Leader will assemble the Site personnel for a brief safety meeting. The purpose of these meetings will be to discuss

project status, problem areas, conditions, safety concerns, PPE levels and to reiterate HASP requirements. The Field Team Leader will complete a Safety Meeting Report (Figure 5.2) to indicate the contents of the meeting and the attendees.

5.4 FIRST AID

At least one (1) individual, trained and qualified to administer first aid and CPR in accordance with American Red Cross requirements, will be present at the Site.

5.5 SAFE WORK PERMIT

Site workers in special work conditions such as confined space, hot work, trenching, or other physical hazards, must be skilled at such work and trained to recognize these as special work conditions. Confined space is defined by OSHA 1910.146. Section 13 of this HASP contains further information on the confined space program to be followed.

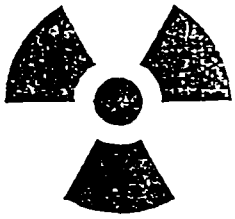
Figure 5.3 shows the Safe Work Permit to be completed by the HSC and signed by workers for special work conditions.

FIGURE 5.1
VISITOR INFORMATION SHEET

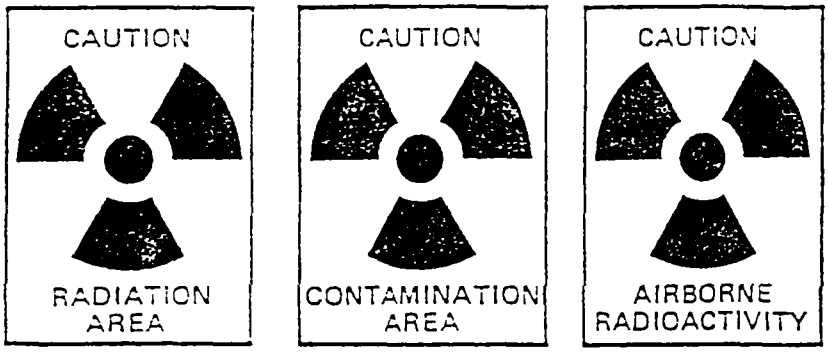
KM-4792

VISITOR INFORMATION

NOTICE TO VISITOR: ALL VISITORS MUST BE ESCORTED AT ALL TIMES WHILE ON THIS SITE.



CAUTON. Radioactive materials are present on this site. Radioactive materials may be found throughout the site. Grounds, buildings and equipment have low levels of contamination.



CONTROLLED AREAS: Do not enter areas with these signs unless you have an escort or health physics has given specific approval and you understand access limitations.

You must wear protective clothing in controlled areas. Health physics will provide you with instructions.

You must wear a personal radiation dosimeter if you enter an area which is controlled.

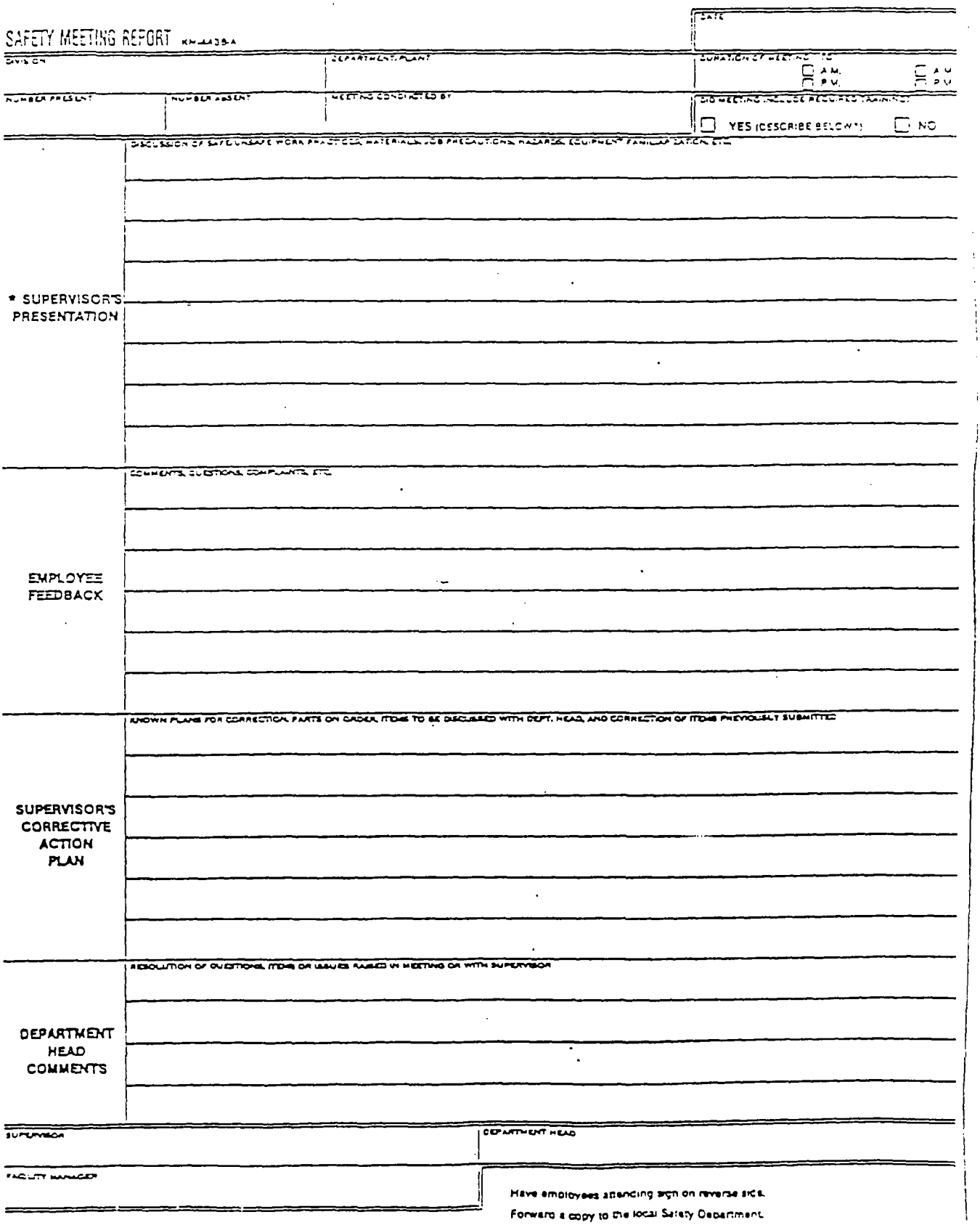
No smoking, eating, drinking or chewing in controlled areas.
NO EXCEPTIONS.

You may request to see radioactive materials license for this facility as granted by the USNRC.
Notify Health Physics if you do not understand these instructions.

NAME _____ DATE _____

Figure 5.2

Safety Meeting Report (KM-4438-A, front side)



SAFETY MEETING REPORT KM-4438-A

DATE

DIVISION

DEPARTMENT, PLANT

DURATION OF MEETING: FROM ☐ A.M. ☐ P.M. TO ☐ A.M. ☐ P.M.

NUMBER PRESENT

NUMBER ABSENT

MEETING CONDUCTED BY

DID MEETING INCLUDE REQUIRED TRAINING? ☐ YES (DESCRIBE BELOW) ☐ NO

* SUPERVISOR'S PRESENTATION

DISCUSSION OF SAFE/UNSAFE WORK PRACTICES, MATERIALS, JOB PRECAUTIONS, HAZARDS, EQUIPMENT FAMILIARIZATION, ETC.

EMPLOYEE FEEDBACK

COMMENTS, QUESTIONS, COMPLAINTS, ETC.

SUPERVISOR'S CORRECTIVE ACTION PLAN

KNOWN PLANS FOR CORRECTION, PARTS ON ORDER, ITEMS TO BE DISCUSSED WITH DEPT. HEAD, AND CORRECTION OF ITEMS PREVIOUSLY SUBMITTED

DEPARTMENT HEAD COMMENTS

RESOLUTION OF QUESTIONS, ITEMS OR ISSUES RAISED IN MEETING OR WITH SUPERVISOR

SUPERVISOR

DEPARTMENT HEAD

FACILITY MANAGER

Have employees attending sign on reverse side.
Forward a copy to the local Safety Department.

Figure 5.2

Safety Meeting Report (KM-4438-A, reverse side)

TO BE SIGNED BY ALL EMPLOYEES ATTENDING MEETING

I have received and understand the information and/or training indicated on the reverse side.

SIGNATURE	DATE	SIGNATURE	DATE

LIST ALL EMPLOYEES ABSENT FROM MEETING

Figure 5.3

Safe Work Permit (KM-2565-1-B, upper section of front side)

SAFE WORK PERMIT KM-2565-1-B

SHADED AREAS MUST BE COMPLETED.

COMPLETED PERMIT MUST BE POSTED AT THE ENTRY OR WORK SITE

PLANT/DEPARTMENT	ISSUED BY	DATE	TIME (FROM) ☐ A.M. ☐ P.M.	(TO)
ACCEPTED BY		COMPANY/DEPARTMENT/CONTRACTOR		
RESPONSIBILITY TRANSFERRED TO (NAME)		CO-SIGNATURE (IF REQUIRED)		
LIST ALL WORKERS OR ATTACH ROSTER (OVER)		IS WORK AREA OSHA PSM REGULATED? ☐ Yes ☐ No		

AN ALERT, GAS RELEASE, EVACUATION, INTERRUPTION OF 8 HOURS OR MORE OR CHANGE IN WORKING CONDITIONS SUSPENDS THIS PERMIT. (Permit must be reissued or reauthorized)

SECTION 1 — GENERAL AREA WORK PERMIT

1. WORK LIMITED TO THE FOLLOWING: (DESCRIPTION & AREA/EQUIPMENT)

2. ON-SITE INSPECTION CONDUCTED/ALL LOCKS OR TAGS ATTACHED, IF REQUIRED/ENVIRONMENTAL IMPACT OF JOB CONSIDERED — PERMIT ISSUER INITIALS — PERMIT RECE INITIALS

3. SPECIAL HAZARDS TO PROTECT AGAINST ☐ NONE MSDS AVAILABLE ☐ YES ☐ NO ☐ N/A

CHEMICALS (NAME)

☐ Flammable ☐ Noise ☐ Hot Water/Steam ☐ Thermal Burn ☐ Falls ☐ Pinch Pts./Srp. Edges
☐ Toxic ☐ Corrosive ☐ Heat Stress ☐ Elect/High Vltg. Line ☐ Asbestos ☐ Other _____
☐ Skin Contact ☐ Reactive ☐ High Pressure ☐ Inert Atmosphere ☐ Radiation _____

ENERGY (TYPES) ☐ Electrical _____ ☐ Hydraulic/Pneumatic _____ ☐ Other (magnitude) _____

4. SAFETY EQUIPMENT (OTHER THAN AREA REQUIREMENTS) ☐ NONE

☐ Rain Suit ☐ Gloves ☐ Face Shield ☐ Ground Fault Circuit Int. ☐ Air Pack (SCBA) ☐ Fire Resistant C
☐ Chemical Suit ☐ Hearing Protection ☐ Hood ☐ Barricades/Warning Signs ☐ Supplied Air ☐ Long Sleeves
☐ Rubber Boots ☐ Chemical Goggles ☐ Fall Restraint Device ☐ Communications Equip.(list) ☐ Respirator ☐ Other _____

5. THE PERSON RECEIVING THE PERMIT VERIFIES THAT ALL WORKERS :

A. Have been through the Plant Safety Orientation	☐ Yes	F. Know emergency alarms, evacuation, assembly points	☐
B. Understand Applicable HAZCOM requirements	☐ Yes	G. Know the Procedures for Safe Job Completion	☐
C. Have discussed hazards of the job and area	☐ Yes	H. Have inspected all tools/equipment/scaffolding	☐
D. Know the location/use of safety showers/eye wash stations	☐ Yes	I. Understand the Housekeeping Requirements	☐
E. Know the location of the phone or intercom	☐ Yes	PERMIT RECEIVER INITIALS	

6. POTENTIALLY AFFECTED AREA PERSONNEL AND WORKERS NOTIFIED OF WORK TO BE DONE ☐ YES ☐ N/A

7. THE FOLLOWING RESPONSIBILITIES HAVE BEEN COMMUNICATED TO THE PERSON RECEIVING THIS PERMIT:
☐ Conditions For Work Stoppage ☐ Performing The Work Safely ☐ Completion Of Section 8 And Permit Retu
☐ Crew Accountability ☐ Reporting Changes That Affect Job Safety

SECTION 2 — AIR TESTS

PRIOR TO ENTRY OR HOT WORK ☐ DOES NOT APPLY

TEST IN ORDER INDICATED

		READING	RANGE	TESTED BY	LOCATION OF TEST	TIME
1. Oxygen meter test performed	☐ Yes ☐ N/A	%O_2	19.5-23.5% O_2			
2. Combustible gases and vapors test	☐ Yes ☐ N/A	% LEL	MAXIMUM 10% LEL			
3. Tests for toxics (Substance)	☐ Yes ☐ N/A	READING ☐ PPM ☐ mg/M³	PEL/TLV ☐ PPM ☐ mg/M³			

SECTION 3 — OBSERVATION & RESCUE

☐ DOES NOT APPLY

1 ☐ Yes ☐ N/A	Continuous monitoring for _____ (SUBSTANCE)	TESTED BY	TIME (FROM) ☐ A.M. ☐ P.M.	TIME (TO)	
☐ Yes ☐ N/A	Periodic tests for _____ (SUBSTANCE)	TESTED BY	TIME (FROM) ☐ A.M. ☐ P.M.	TIME (TO)	
☐ Duration of work ☐ Personal	☐ Area ☐ Other _____				
2 ☐ Yes ☐ N/A	Fire/safety/confined space attendants	DESIGNATED PERSON(S)		HOW TO CONTACT	
3 ☐ Yes ☐ N/A	Backup rescuer(s)	DESIGNATED PERSON(S)		HOW TO CONTACT	
4 ☐ Yes ☐ N/A	Special rescue service/ equipment required	LOCATION OF SPECIAL EQUIPMENT		RESCUE SERVICE PHONE NUMBE	

Figure 5.3

Safe Work Permit (KM-2565-1-B, lower section of front side)

SECTION 4 — HOT WORK

☐ DOES NOT APPLY

	YES	N/A		YES
1. Fire Extinguisher (Type: _____ Is it full?			8. Ground lead attached to work	
2. Survey area for combustibles and openings (holes, trenches, etc.)			9. Prevention of heat exposure to gaskets, seals, liners	
3. Combustible materials removed or protected			10. Other work in area which should be stopped	
4. Heat/spark control - tarps, covers, water, etc.			11. Material present which emits vapor when heated	
5. Precaution taken for hidden combustibles			12. Radiant heat transfer considered	
6. Purge gas used. Type _____			13. Equipment operating or contains original contents	
7. Adjacent areas safe/sewers protected			14. Ducts or conveyors plugged or protected	

SECTION 5 — ENERGY LOCKED/TAGGED

☐ DOES NOT APPLY

	YES	NO	N/A		YES	NO
1. Line positively identified				9. Are all automatic valves secured in a safe position?		
2. Line/equip. drained, depressured, piping process supported				10. Electrical panel switches locked, tagged and tested		
3. Line/equipment cleaned and purged				11. Field switches tested		
4. Blinds and/or block and bleed in place				12. Fuses removed/switches open		
5. Lock(s) required (list lockout points)				13. Are belts/couplings removed?		
6. Splash guards considered				14. Are rotating parts blocked?		
7. Adjacent area safe. (If limited, describe below)				COMMENTS		
8. Area roped/taped off						

SECTION 6 — CONFINED SPACE

☐ DOES NOT APPLY

	YES	NO	N/A		YES	NO
1. Confined space entry required?				5. Have authorized entrants signed opposite side of this form?		
2. Space to be entered _____				6. Have designated attendants signed opposite side of this form?		
3. Purpose of entry _____						
4. Is space a permit-entry space? If "YES", complete opposite column				7. Have all necessary hazard control measures been taken?		
				8. Has all required equipment been provided?		

SECTION 7 — TRENCHING/EXCAVATION

☐ DOES NOT APPLY

	YES	NO	N/A		YES	NO
1. Has the area been inspected for underground power lines or product lines?				4. Have precautions been taken if the trench/excavation develops into a confined space?		
2. Does the trench require shoring/bracing support?				5. Have overhead power/product lines been removed or identified?		
3. Has the soil been evaluated for stability?				6. Will leaking water or rain water affect the stability of the trench/excavation?		

SECTION 8 — Questions to be Completed on Permit Expiration or Job Completion

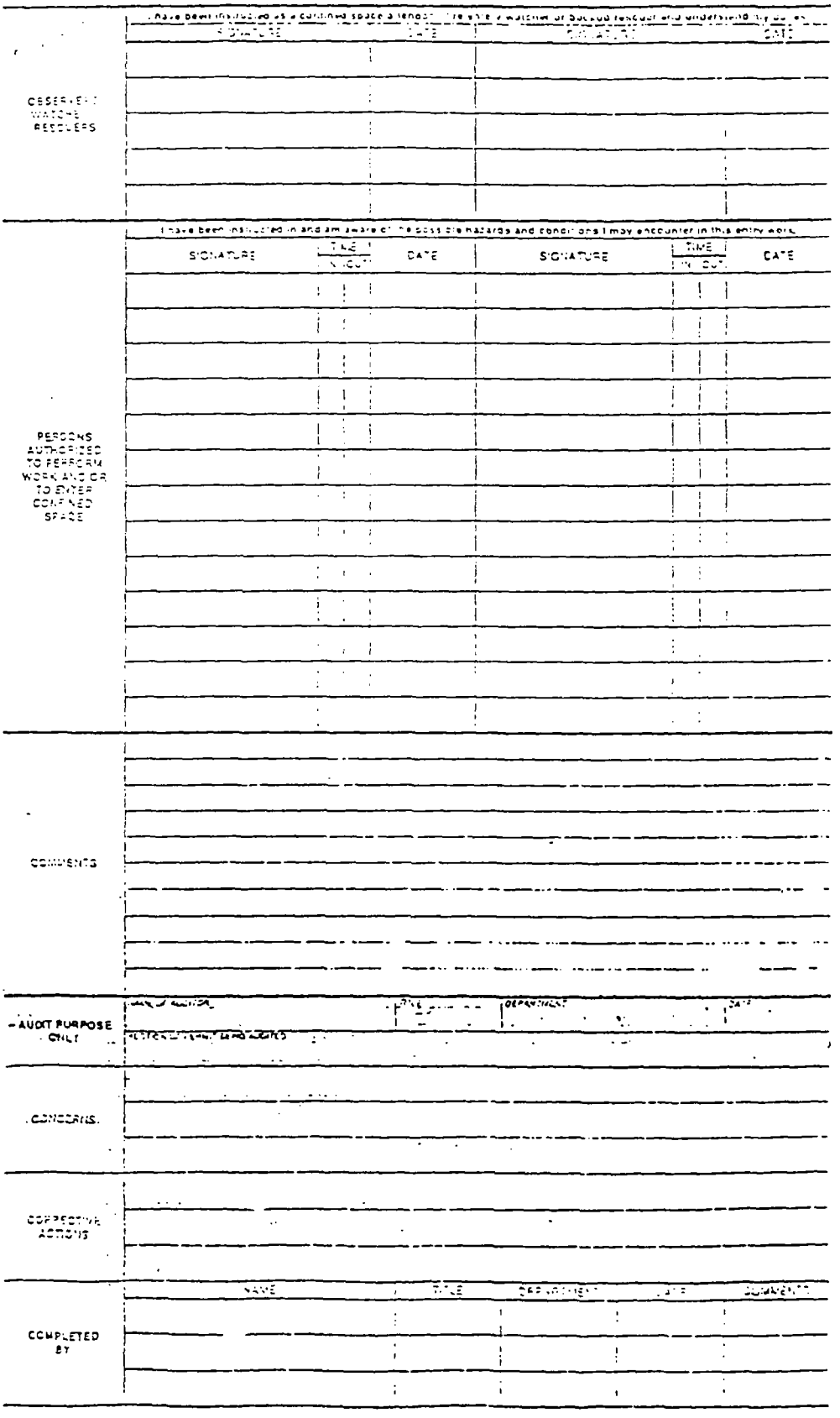
WORKER CLOSEOUT SIGNATURE

TIME _____ DATE _____

	YES	NO	N/A		YES	NO
1. Has the job been completed?				5. Have safety devices been reinstalled?		
2. Has the area been cleaned of work material?				6. Has hot work area been surveyed for smoldering materials?		
3. Have department personnel been informed job is done?				7. Special precautions, concerns or remarks?		
4. Have all locks and/or tags been removed?				COMMENTS		

Figure 5.3

Safe Work Permit (KM-2565-1-B, reduction of reverse side)



6. COMMUNICATIONS

6.1 GENERAL COMMUNICATIONS

The Field Team Leader will have available at the Site the means for telephone communications, or an equivalent means of communication, for summoning emergency assistance from the fire/ambulance and police departments in the event they are required. The telephone will also act as a direct link to technical personnel for information pertaining to all phases of the project.

6.2 RADIOS/TELEPHONES

Short-range walkie talkies or cellular telephones will be made available to designated personnel working at the Site.

6.3 EMERGENCY WARNING

In the event of an emergency condition, the Field Team Leader will notify project personnel verbally if all are within immediate hearing and via a bull horn if the Site area is large. The Field Team Leader will also notify visitors present within the area. Site personnel will immediately proceed to a predesignated assembly area as designated by the Field Team Leader during the daily safety meeting. Personnel will remain in the designated area until further instructions are received by the Field Team Leader.

All communication equipment will be tested at the beginning of each day to verify operational integrity.

6.4 HAND SIGNALS

Hand signals will be used by field teams in conjunction with the buddy system. Hand signals shall be familiar to the entire field team before operations commence and should be reviewed during site-specific training.

Signal	Meaning
Hand gripping throat	Out of air; can't breathe
Grip partner's wrist	Leave area immediately; no debate
Hands on top of head	Need assistance
Thumbs up	OK; I'm all right; I understand
Thumbs down	No; negative

6.5 SITE SECURITY

Only authorized personnel will be permitted on the Site.

. Visitors and other non-essential personnel may enter the work area only upon authorization by the Field Team Leader. This restricted access will ensure that the Field Team Leader can communicate with each person authorized to enter the work area.

7. PERSONNEL EXPOSURE AND AIR QUALITY MONITORING

7.1 AIR QUALITY (DUST)

Due to the nature of the principal contaminants associated with the project, dust suppression will be important as a means of minimizing exposure levels and off-site migration of contaminants. The Field Team Leader will routinely monitor the project area. The OSHA personal exposure limit (PEL) for nuisance dust is 15 mg/m^3.

7.2 AIRBORNE RADIOACTIVITY MONITORING

Monitoring for airborne radioactivity exposure is as important as monitoring for external radiation exposure. Monitoring for airborne radioactivity exposure requires the following elements:

- Air sampling for radioactive particulates,
- Recordkeeping regarding personnel work locations and time in location, and
- Respiratory protective equipment records regarding devices used by workers in airborne radioactivity areas.

By closely monitoring these three elements, a continuous record of personnel exposure to airborne radioactivity is maintained.

Lapel samplers worn for personal air monitoring can be utilized for airborne radioactivity monitoring. Air filters shall be analyzed on a daily basis to determine potential contributions to dose from radionuclides. It is expected that naturally occurring radon and thorium daughters will interfere with analyses. Additional evaluation of samples shall be performed when determined necessary based upon elevated results. Such analyses shall be performed after allowing time for decay of some interfering radionuclides.

Downwind monitoring of the excavation areas for radioactive particulate activity also will be performed. High volume air samplers shall run continuously during operations and be evaluated on a daily basis for gross alpha activity. Comparisons will be made to 32 IAC 340 Appendix A to ensure that adequate radiological controls are in place for workers and the general public. As low as reasonably achievable (ALARA) concepts will be utilized when considering protective measures to ensure that internal exposures are minimized, while also considering the effects of such protective measures with respect to external exposures. Controls on the Site such as wetting of soils and procedural changes, will be employed prior to the prescription of respiratory protective

Airborne radon gas can represent a personnel exposure concern if allowed to accumulate in confined spaces. Open excavations which may qualify as OSHA confined spaces are not of a concern due to the ability of the gas to dissipate and accumulation time. Vaulted spaces which are ventilated as a normal confined space entry procedure will adequately relieve potential radon accumulations. If time and planning allow, working level measurements consisting of 5 minute sampling and 2 counts (90 minutes and 5 hours) can be taken to assess conditions.

Time decay of interfering nuclides generally refers to radon-222 decay and daughters but may also include thoron decay. The specific times for decay of samples is best addressed in procedures rather than in the health and safety plan. Air samples will be decayed a minimum of 5 hours to allow for counting without interference from radon-222 and its daughters. Thoron (Rn-220), if present in significant amounts, will require decay for up to 4 days to allow for decay of it is Pb-212 daughter (10.6 hour half life).

After filters have been collected and decayed overnight, there will be a morning count of the filter that will serve to identify high gross counts for the previous day. This will alert health & safety staff of a potential problem which they can investigate more promptly. The count, after 4 days decay, will serve to be the official measurement of Th-Alpha.

7.3 INTERNAL MONITORING

Internal monitoring to determine intakes of radioactive material will be performed as needed based upon the results of the air sampling program. Bioassay methods to be considered should include in-vivo, as well as in-vitro, assessments. Routine bioassay of workers is not anticipated based upon the low concentrations of radioactivity in soils to be excavated.

7.4 EXTERNAL RADIATION MONITORING

External radiation monitoring of workers will be performed using film badges or thermoluminescent dosimeters. Dosimetry will be provided and processed by a service holding National Voluntary Laboratory Accreditation Program (NVLAP) certification. Pocket dosimeters may also be utilized for visitors and other infrequent personnel requiring access to the Site.

7.5 RADIOLOGICAL SURVEYS

Radiological surveys will be performed to ensure that radiation levels and contamination levels are within regulatory limits for workers and the general public. Radiation surveys will consist of ambient gamma surveys using micro-R meter (ion chamber or NaI) or tissue equivalent dose rate meter (Geiger-Mueller detectors), as appropriate, and contamination surveys.

7.6 CONTAMINATION MONITORING

Samples shall be obtained periodically in work areas to ensure that radioactivity is present at acceptable levels and is prevented from leaving the Site. Decontamination of elevated areas will be performed to maintain contamination at levels that are ALARA.

Before leaving the exclusion zone, Site personnel shall be checked through use of a hand-held frisker to ensure that contamination is not present on skin or clothes. The Field Team Leader will be immediately informed regarding any contamination on individuals and will initiate appropriate decontamination techniques. Proper disposition of contaminated personal effects and clothing also will be the responsibility of the Field Team Leader.

7.7 TOTAL ORGANIC VAPOR MONITORING

In addition to the radiological contaminants, there is a slight potential of encountering organic vapors. Organic vapors were encountered near the water table during previous investigation at the Site. Routine screening for total organic vapors will be conducted with a photoionization detector (PID), or similar type equipment, on a daily basis. The screening will evaluate ambient photoionization volatile organic vapors and some semi-volatile organic vapors.

Total organic vapors in ambient air will be obtained periodically with a PID during daily field activities. The PID provides real-time readings of exposure to volatile organics and some semi-volatile organics. Measurements will be made daily, prior to activities, to determine background levels. Monitoring measurements will be taken when:

- operations change,
- work moves to a different portion of the Site, and
- personnel observe contaminated materials.

These screening operations will be used to identify conditions requiring an upgrade to full-face respirators as described in Section 7.8.2.

7.8 ACTION LEVELS

7.8.1 Radiological Action Levels

Radiological action levels for on-site workers will be determined by smear/swipe measurements as well as airborne particulate monitoring for the presence of radioactivity. The Field Team Leader will perform radiological monitoring. The radioactive contamination on the Site is particulate and insoluble in water. Therefore, there will be no fixed contamination on the workers. Action levels as determined by radioactive monitoring can be found in Table 7.1.

To avoid the need for upgrade of personal protection equipment due to airborne contamination, engineering controls such as the use of water to minimize dust levels will be implemented as necessary during excavation and restoration activities.

7.8.2 Organic Vapors Action Levels

Permit Applicants will take a conservative approach to organic vapor monitoring at the Site. A PID will be used to monitor for organic vapors. Operations will be discontinued if the PID reads 5 ppm[1] or greater and the area will be evacuated. The Site Health and Safety Officer will retest the area wearing a full-face respirator. Operations will not resume until the PID reads less than 5 ppm, and remains below 5 ppm.

---

[1]PID level obtained for Benzene from NIOSH Pocket Guide to Chemical Hazards.

TABLE 7-1

ACTION LEVELS AS DETERMINED BY RADIOACTIVITY

Note: Personnel shall not be exposed to airborne radioactivity such that their weekly intake exceeds 12 Derived Air Concentration (DAC)-hours without prior approval of the Field Team Leader or designee.

Level of protection may be increased to Level C (full-face air purifying respirator) when airborne monitoring indicates that contamination levels have reached 30% of the DAC. All assessments shall incorporate ALARA principles Engineering controls shall be used prior to assignment of respiratory protective equipment.

Signs shall be posted at entrances to areas where airborne radioactivity levels exceed, or have the potential to exceed, 25% of the DAC.

Radiation Type	Action Level	Level of Respiratory Protection/Action
a. Contamination on smear samples	60 pCi/100 cm^2 gross alpha[a]	Consider modified Level C (full- face APR) based upon ALARA evaluation.
b. Airborne Radioactivity	30% DAC[b]	Consider Level C (full-face APR) based upon ALARA evaluation. Ensure proper posting. Consider internal monitoring
c. Ambient Gamma (work areas)	5 mrem/hr[c]	Consider procedures for shielding of soils. Ensure proper posting.
d. Ambient Gamma (off-site areas)	2 mrem/hr[d]	Implement immediate controls to reduce dose equivalent rate.

Notes

(a) This is approximately 3 times the unrestricted release criteria in the NRC Regulatory Guide 1.86. If any dry-brushing or otherwise abrasive-type decontamination of the sampled equipment is required, the Action Level shown shall require modified Level C (full-face APR).

(b) Potential Airborne Radioactivity Area as defined in 10 CFR 20. Workers with 1000 DAC-hours per year to date must wear modified Level C (full-face APR) until the end of the calendar year.

(c) The ambient gamma dose equivalent rate action level of 5 mrem/hr stems, from the 10 CFR 20 radiation area definition. If the ambient gamma dose equivalent rate reaches 2 mrem/hr, one or more of the following actions will be implemented: The source may be shielded; the working distance from the source may be increased; or the worker's exposure time may be limited.

(d) The ambient gamma action level for off-site is based upon the 10 CFR 20 requirements to maintain dose equivalent rates in unrestricted areas such that they do not exceed 0.002 rem in any one hour.

8. PERSONAL PROTECTIVE EQUIPMENT

It is anticipated that most excavation activities in designated exclusion zones can be conducted in Level D personal protective equipment (PPE), with a contingency upgrade to Level C, based on the action levels listed in Section 7. Level C will be used when required by Special Work Permits, or when directed by the Field Team Leader.

Level D personal protective clothing and equipment for excavation activities includes:

- Coveralls, launderable or disposable
- Hard hat,
- Chemical resistant, OSHA approved safety shoes/boots,
- Cotton or leather gloves,
- Safety glasses, and
- Dust mask (optional).

Level C protective clothing and equipment includes:

- Full-face air-purifying respirator (NIOSH/MSHA approved) fitted with radionuclides/HEPA cartridges and/or organic vapor cartridges, depending on which action levels are exceeded (see Section 7 of this HASP),
- Coveralls,
- Tyvek coveralls - required in areas when splashing by contaminated soils or water is a possibility,
- Cotton or leather gloves,
- Disposable latex inner gloves - required in areas when splashing by contaminated soils or water is a possibility,
- Nitrile outer gloves (taped) - required in areas when splashing by contaminated soils or water is a possibility,
- Chemical-resistant steel toe boots, and
- Hard hat.

Action levels used to determine the need to upgrade or downgrade the levels of protection are described in Section 7 of this HASP.

9. CONTAMINATION REDUCTION PROCEDURES

9.1 EQUIPMENT

Portable equipment will be decontaminated with soap and water and rinsed with tap water. Heavy equipment will be steam-cleaned with water and, if necessary, a detergent solution. It is not anticipated that chemical cleaning will be necessary for decontamination.

9.2 PERSONNEL

If levels of radioactivity show that individuals can remove coveralls and other personal protective clothing and equipment before leaving the work-site and, thus complete decontamination, the individuals may leave the Site. If, however, levels of radioactivity show that individuals cannot achieve decontamination by the removal of coveralls and showering is required, they will be dressed in clean coveralls, boots and gloves and be transported to a hospital emergency room/trauma center capable of chemical contamination response to complete decontamination.

If substantial skin contamination occurs on an individual working with radioactive materials, the following specific procedures should be followed to prevent fixation of the material in the skin or absorption of the radioactivity through the skin.

Immediate Action: Notify the HSC or Field Team Leader, who will supervise the decontamination. If contamination is spotty, the HSC or Field Team Leader will supervise the cleaning of the individual spots with swabs, soap, or water. If the contamination is general, the HSC or Field Team Leader may recommend washing the area gently in warm or cool water (not hot) using hand soap (not detergent) for one minute. Rinse, dry, and monitor for radioactivity. This soap wash step may be repeated three times.

Evaluation: If the above procedure fails to remove all the skin contamination, the treatment should cease. An evaluation of the skin contamination should be performed by the HSC or Field Team Leader including an estimate of the dose commitment to the skin, and the quantity and identity of the nuclides contaminating the skin. If additional decontamination steps are necessary, they are performed and documented by the HSC. The guidelines for Personnel Decontamination in the Radiological Health Handbook, HEW 1970, beginning on page 194, can be used as applicable. CAUTION: Do not use chemicals for personnel decontamination until full evaluation of the contamination is made by the HSC or Field Team Leader.

9.3 CONTAMINATION PREVENTION

Work practices that minimize the spread of contamination will reduce worker exposure and help ensure valid sample results by precluding cross-contamination. Procedures for contamination avoidance include:

- knowing the limitations of all personal protective equipment being used,
- avoiding walking through areas of obvious or known contamination,
- refraining from handling or touching contaminated materials directly. Do not sit or lean on potentially contaminated surfaces,
- ensuring personal protective equipment has no cuts or tears prior to donning,
- fastening all closures on suits, covering with tape if necessary,
- taking steps to protect against any skin injuries,
- staying upwind of airborne contaminants, and
- when working in contaminated areas, refraining from eating, chewing gum, smoking, or engaging in any activity from which contaminated materials may be ingested.

9.4 DISPOSAL PROCEDURES

All discarded materials, waste materials, or other field equipment and supplies should be handled in such a way as to preclude the spread of contamination, creating a sanitary hazard, or causing litter to be left on-site. All potentially contaminated waste materials (e.g., clothing, gloves) shall be monitored and segregated in accordance with monitoring results into either radioactive or non-radioactive waste. Appropriate labels shall be affixed to all containers of radioactive materials.

10 GENERAL WORK PRECAUTIONS

10.1 GENERAL WORK PRECAUTIONS

The following general work precautions apply to all Site personnel.

- Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand-to-mouth transfer and ingestion of material is prohibited in the work area.

- Hands and face must be thoroughly washed upon leaving the work area. Wash water will be provided at the Site for this purpose.

- Whenever levels of radioactivity warrant, the entire body should be thoroughly washed, as soon as possible, after the protective coveralls and other clothing are removed as part of the decontamination process.

- No facial hair that interferes with a satisfactory fit of the mask-to-face-seal is allowed on personnel required to wear respirators.

- Contact with contaminated or suspected contaminated surfaces should be avoided. Whenever possible, do not walk through puddles, leachate, discolored surfaces, kneel on ground, lean, sit, or place equipment on drums, containers, or the ground.

- Medicine, drugs and alcohol may interfere with or impair judgment and reaction times. Therefore, usage of prescribed drugs must be specifically approved by a qualified physician and made known to the Field Team Leader prior to an individuals' presence on the work-site. Alcoholic beverage intake is strictly prohibited at the Site and prior to work.

- All personnel must be familiar with standard operating procedures and any additional instructions and information contained in the HASP.

- Work areas for various operational activities shall be established.
- Procedures for leaving a contaminated area shall be planned and implemented prior to going on-site. Work areas and decontamination procedures shall be established based on expected Site conditions.
- Frequent and regular inspection of Site operations will be conducted to ensure compliance with the HASP. If any changes in operation occur, the HASP will be modified to reflect those changes.

11. SANITARY FACILITIES

11.1 POTABLE WATER

a. An adequate supply of potable drinking water shall be maintained at all times immediately outside the Site. Drinking water shall meet all federal, state and local health requirements.

b. Drinking water shall be supplied to project personnel via approved dispensing sources.

c. Paper cups shall be permitted for the drinking of potable water supplies.

d. Drinking water dispensers shall be clearly marked and shall, in no way, have the potential for contamination from non-potable supplies.

e. Site personnel must be fully decontaminated prior to approaching the drinking water supply.

11.2 TOILET FACILITIES

a. Adequate toilet facilities shall be provided at the Site.

b. These facilities shall be in the form of portable chemical toilets.

c. Routine servicing and cleaning of the toilets should be established with the selected contractor and shall be in accordance with federal, state, and local health regulations.

d. Site personnel must be fully decontaminated prior to approaching the toilet facilities.

11.3 WASHING AREAS

a. Adequate washing areas shall be provided for personal use within the work area.

b. Washing areas shall be maintained in a sanitary condition and will be provided with adequate supplies of soap, towels for drying, and covered waste receptacles.

c. Washing areas shall be maintained and sanitized daily.

d. No eating, drinking or smoking shall be permitted in the work area. This policy will be strictly enforced by the Field Team Leader.

12. FIRE CONTROL EQUIPMENT

An adequate number of approved portable fire extinguishers (class rated A, B and C) shall be readily available at the Site at all times.

All Site personnel shall be trained in the use of the extinguishers. Extinguishers shall only be used on outbreak stage fires or fires of minor nature. The local fire department shall be contacted in the event of a larger fire and Site evacuation procedures should be commenced in accordance with the procedures described in the Emergency Contingency Plan.

13. CONFINED SPACE PROGRAM

13.1 PURPOSE

In the event that confined space work is a necessity, a Confined Space Program will be implemented. Training in the recognition of confined spaces is a component of the health and safety training program.

The purpose of the Confined Space Program is to establish procedures to protect personnel from this serious hazard in the course of their work; and at a minimum, to comply with 29 CFR OSHA 1910.146. This document assigns responsibilities and sets standards for personnel engaged in activities where confined spaces may be present.

13.2 RESPONSIBILITIES

13.2.1 Health and Safety Coordinator

The Health and Safety Coordinator administers the Confined Space Program. The Health and Safety Coordinator's responsibilities include:

- Review of the HASP for potential confined space hazards and design alternative approaches to accomplish the confined space tasks;
- Coordinating and managing the Confined Space Program in the event one is required;
- Establishing priorities for implementation of the program;
- Assisting with recognition and implementation of the Confined Space Program;
- Advising project management on confined space issues; and
- Communicating the Confined Space Program to personnel by training related to specific Site activities.

13.2.2 Project Manager

The Project Manager directs the application of the Confined Space Program to project work. The Project Manager is responsible for:

- Working with the Health and Safety Coordinator to prepare information describing activities that might be conducted in a confined space area;

- Assuring that all personnel engaged in project activities are familiar with the definition of a confined space.

- Assuring that personnel are familiar with the Confined Space Program, and that project activities are conducted in compliance with the Confined Space Program;

- Assuming the responsibilities of the Field Team Leader if another person is not assigned these responsibilities.

13.2.3 Field Team Leader

The Field Team Leader is responsible for the implementation of the Confined Space Program on-site during field activities. The Field Team Leader is responsible for:

- Overseeing implementation of the Confined Space Program during field operations; and

- Reporting confined space work activity, and any violations of the Confined Space Program, to the Project Manager and the Health and Safety Coordinator.

13.2.4 Personnel

Personnel are responsible for:

- Familiarizing themselves with the Confined Space Program and following it;

- Becoming familiar with the criteria for determining a confined space, and with the monitoring, permitting, and other requirements of the program; and

- Reporting immediately a confined space condition to the Field Team Leader.

13.3 DEFINITION OF A CONFINED SPACE

Confined space means a space that:

1. Is large enough and so configured that an employee can bodily enter and perform assigned work;

2. Has limited or restricted means for entry or exit (such as pits, storage bins, hoppers, crawl spaces, and storm cellar areas); and

3. Is not designed for continuous employee occupancy.

Any workspace meeting all of these criteria is a confined space and the Confined Space Program must be followed.

13.4 CONFINED SPACE ENTRY PROCEDURES

13.4.1 Safety Work Permit Required

All spaces shall be considered permit-required confined spaces until the pre-entry procedures demonstrate otherwise. The Safe Work Permit for entry into a confined space must be completed before work begins; it verifies completion of the items necessary for confined space entry. The Permit will be kept at the Site for the duration of the confined space work. If there is an interruption of work, or the alarm conditions change, a new Permit must be obtained before work begins.

A permit is not required when the space can be maintained for safe entry by 100% fresh air mechanical ventilation. This must be documented and approved by the Health and Safety Coordinator. Mechanical ventilation systems, where applicable, shall be set at 100% fresh air.

The Field Team Leader must certify that all hazards have been eliminated on the Entry Permit. If conditions change, a new permit is required.

13.4.2 Pre-entry Testing for Potential Hazards

a. Surveillance

Personnel first will survey the surrounding area to assure the absence of hazards such as contaminated water, soil, or sediment, barrels, tanks, or piping where vapors may drift into the confined space.

b. Testing

No personnel will enter a confined space if any one of these conditions exists during pre-entry testing. Determinations will be made for the following conditions:

1. Presence of toxic gases or dusts: Equal to or more than 5 parts per million (ppm) on the organic vapor analyzer with an alarm, above background outside the confined space area; or other action levels for specific gases, vapors, or dusts as specified in the Health and Safety Plan and the Confined Space Permit based on knowledge of Site constituents;

2. Presence of explosive/flammable gases: Equal to or greater than 10% of the Lower Explosive Limit (LEL) as measured with a combustible gas indicator or similar instrument (with an alarm); and

3. Oxygen Deficiency: A concentration of oxygen in the atmosphere equal to or less than 19.5% by volume as measured with an oxygen meter.

Pre-entry tests results will be recorded and kept at the Site for the duration of the job by the Field Team Leader. Affected personnel can review the test results.

c. Authorization

Only the Field Team Leader and the Health and Safety Coordinator can authorize any personnel to enter into a confined space. This is reflected on the Safe Work Permit for entry into a confined space. The Field Team Leader must assure that conditions in the confined space meet permit requirements before authorizing entry.

d. Safe Work Permit

An Safe Work permit for confined space entry must be filled out by the Health and Safety Coordinator or Field Team Leader. A copy of the Safe Work Permit is included as Figure 5.2.

e. Attendants

One worker will stand by outside the confined space ready to give assistance in the case of an emergency. Under no circumstances will the standby worker enter the confined space or leave the standby position. There shall be at least one other worker not in the confined space within sight or call of the standby worker.

f. Observation and Communication

Communications between standby worker and entrant(s) shall be maintained at all times. Methods of communication that may be specified in the Safe Work Permit and the HASP may include voice, voice by powered radio, tapping or rapping codes, signaling tugs on rope, and standby worker's observations that activity appears normal.

13.4.3 Rescue Procedures

Acceptable rescue procedures include entry by a team of rescuers only if the appropriate self-contained breathing apparatus (SCBA) is available; or use of public emergency services.

The standby worker must be trained in first aid, CPR, and respirator use. A first aid kit should be on hand and ready for emergency use. The standby worker must be trained in rescue procedures. Retrieval of an unconscious victim in a confined space will only be conducted by trained rescue personnel. An emergency call to 911 will be initiated to assist the victim.

13.5 TRAINING

Personnel who will engage in field activities will be given annual training on the requirements and responsibilities in the Confined Space Program and on OSHA 1910.146. Only trained personnel can work in confined spaces. Workers should be experienced in the tasks to be performed, instructed in proper use of respirators, lifelines and other equipment, and practice emergency procedures and self-rescue.

Before each Site activity, the determination of confined space work will be part of the Site characterization process. Training in the site-specific confined space activities will be part of the site-specific health and safety training.

13.6 SAFE WORK PRACTICES

- Warning signs should be posted. These include warnings for entry permits, respirator use, prohibition of hot work and emergency procedures and phone numbers.

- Cylinders containing oxygen, acetylene or other fuel such as gasoline must be removed a safe distance from the confined space work area.

- Purging and ventilating is done before work begins to remove hazardous vapors from the space. The space should be monitored to ensure that the gas used to purge the space (e.g. tank) has also been removed. Local exhaust should be used where general exhaust is not practical.

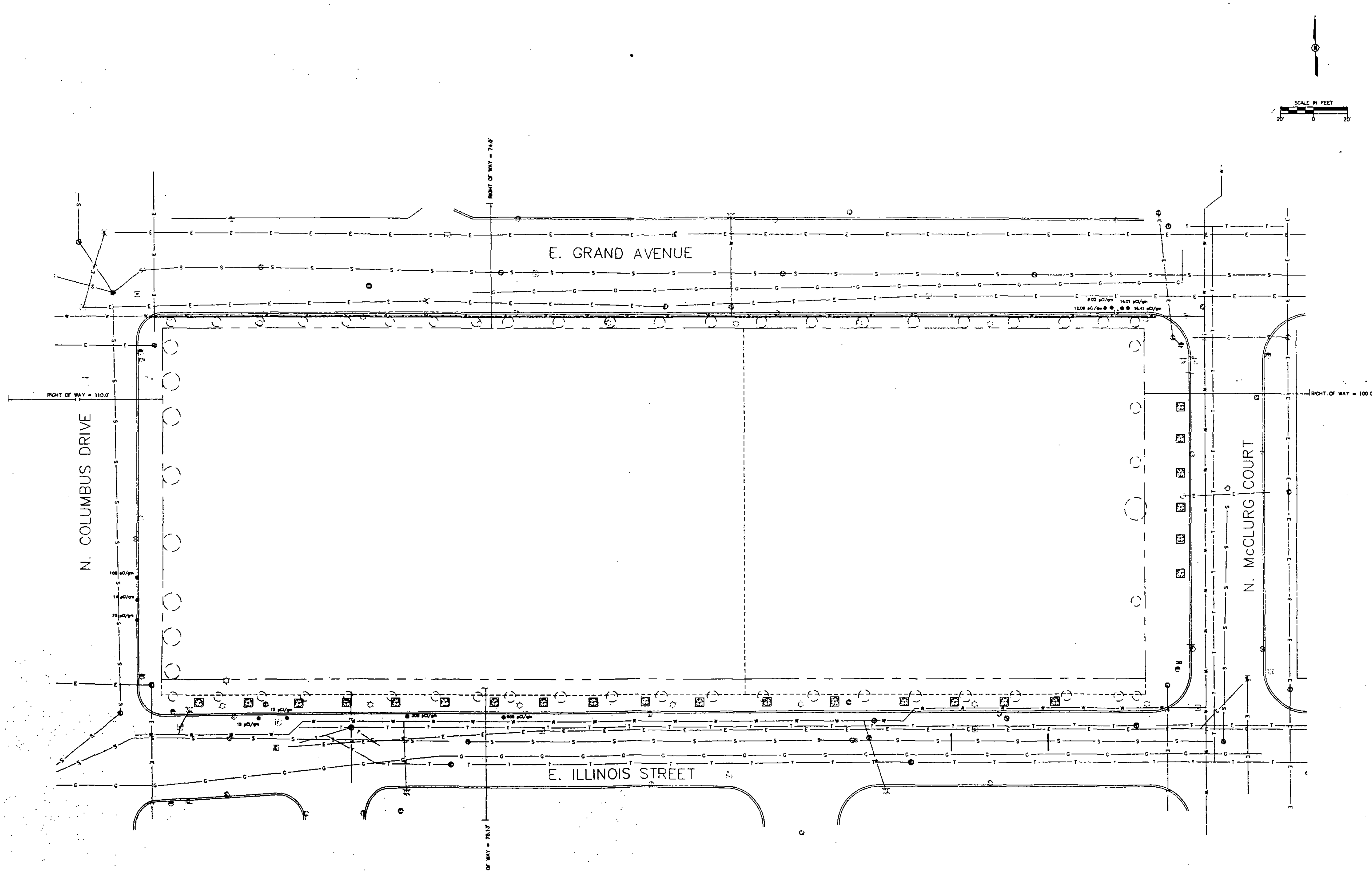
- The buddy system is used at all times. A standby person always must be posted within sight of, or in communication with, the person inside the confined space. The standby should not enter the confined space, but instead will call for help in an emergency and not leave the post. Communication should be maintained at all times with workers inside the confined space.

- Emergency planning in the HASP and an Safe Work Permit must be approved in advance and the proper rescue equipment must be immediately available.

14. ELECTRICAL LOCKOUT/TAGOUT

The Field Team Leader must approve all work in areas requiring lockout/tagout procedures. Specific procedures and permitting requirements will be specified in the HASP, or in a revised HASP based on the need for a worker to work around electrical equipment.

All systems must be locked out and tagged before the work begins. This includes pipes, air lines, electrical equipment and mechanical devices. The equipment must be start tested and approved for use by a worker by the Health and Safety Coordinator or the Field Team Leader by start-testing to make sure the locked-out equipment does not operate.



1/2 EXHIBIT E – (IMPACTED RIGHTS-OF-WAY)
SCALE: 1"=20'

LEGEND

● 300 pCi/gm — LOCATION OF THORIUM IMPACTED SOIL AND MEASURED TOTAL RADIUM CONCENTRATION

NOTES:

(1) – NO PORTION OF THE 5.17 FOOT STRIP OF LAND DEPICTED AS THE AREA "TO BE VACATED" ON THE DRAWING ATTACHED TO THE CITY OF CHICAGO ORDINANCE ENACTED SEPTEMBER 1, 1999 AND NO PORTION OF THE ENCROACHMENTS APPROVED BY THE CITY OF CHICAGO ENACTED OCTOBER 7, 1998 AND NO PORTION OF THE SITE LIES WITHIN THE AREA DESIGNATED HEREON AS "IMPACTED RIGHTS-OF-WAY"

(2) – RIGHT-OF-WAY DIMENSIONS FROM 21st EDITION ATLAS OF COOK COUNTY, ILLINOIS, VOLUME 9, TH SIDWELL COMPANY, 1998

REVISION NO.	DESCRIPTION	DATE	BY
6	GENERAL REVISIONS	9/15/99	TC
5	GENERAL REVISIONS	5/13/99	TC
4	GENERAL REVISION	1/1/99	EJ
3	GENERAL REVISION	12/2/98	EJ
2	GENERAL REVISION	5/22/98	EJ
1	B.O.U. ISSUE	5/05/98	EJ

DRAWN BY: GRS DATE: 4-13-98
CHECKED BY: EJ DATE: 4-13-98
APPROVED BY: EJ DATE: 4-13-98

IMPACTED RIGHTS-OF-WAY

RIVER EAST CENTER
MIXED USE DEVELOPMENT
300 EAST ILLINOIS STREET
CHICAGO, ILLINOIS

RIVER EAST CENTER

CASE FOUNDATION COMPANY

STS PROJECT NUMBER: 24418-RR
SCALE: AS SHOWN
SHEET NUMBER: 1.1